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August 21, 2019

United States Environmental Protection Agency-Region 2
290 Broadway
New York, New York 10007-1866

Attn: Mr. Ricardito Vargas, Project Manager

Subject: August 7, 2019 Meeting and Presentation of the Revised Supplemental Field Sampling and Analysis Plan-Arthur Kill, Spa Spring Creek, and Woodbridge Creek Former Chevron Perth Amboy Facility
1200 Maurer Road, Perth Amboy – Middlesex County
Facility EPA ID #: NJD081982902
TRC Project No. 326731/890

Dear Mr. Vargas:

On behalf of Chevron Environmental Management Company (Chevron) TRC Companies, Inc. (TRC) has prepared this letter and attachments to provide additional information and clarifications regarding specific comments made by the United States Environmental Protection Agency (USEPA) and New Jersey Department of Environmental Protection (NJDEP) on the revised Supplemental Field Sampling and Analysis Plan (SFSAP, July 2019) prepared for the above-referenced Chevron Facility (the Facility).

Chevron and TRC presented the revised SFSAP at a meeting attended by representatives of Chevron, the USEPA, NJDEP, and Buckeye Pipeline Company on August 7, 2019. The objective of the meeting was to resolve any issues of concern to the USEPA and the NJDEP regarding the SFSAP and expedite its review and approval. The SFSAP proposes collection and analysis of sediment samples from Spa Spring Creek and Woodbridge Creek which are the waterbodies adjacent to the Facility. The July 2019 SFSAP was revised from the original submission in November 2018 to address the agencies' concerns as noted in their joint comment letter to Chevron of March 1, 2019. In addition to presenting the revised SFSAP, the meeting included a presentation of the Facility's operational and remedial history and the industrial history and character of the surrounding region, and specifically the Woodbridge Creek watershed. The USEPA and NJDEP raised additional questions and concerns during the meeting, several of which concerned Chevron's responses to earlier comments by USEPA/NJDEP that were discussed in the July 2, 2019 Response to Comments (RTC) letter prepared by TRC (submitted with the SFSAP as a companion document). Other than the specific concerns raised during the meeting and discussed further herein, it is our understanding that the SFSAP is acceptable to the agencies without further comment.

Issues Addressed During August 7, 2019 Meeting

The USEPA and the NJDEP identified several specific issues regarding the SFSAP that were further discussed at the August 7, 2019 meeting, including:

- Sediment sampling protocol details regarding sample interval selection in the field
- Potential data gaps (sample intervals, analytical parameters and related spreadsheet)
- Contaminated sediment delineation
- Light, Non-Aqueous Phase Liquid (LNAPL) areas proximal to the waterways
- Chevron's responses (July 2, 2019) to USEPA Comments 4 and 7 (March 1, 2019 comment letter)
- NJDEP's meeting comments regarding sample data (SED-06, SED-09)

The specific issues are further discussed below with the associated responses, as agreed upon at the meeting. In addition to the specific items listed above and discussed at the meeting, TRC identified typographic errors in the notes to SFSAP Figure 2A (attached), which were corrected on the revised, attached Figure 2A.

Sediment Sampling Protocol

The USEPA and NJDEP had several concerns with the sampling proposed in the SFSAP, e.g., apparent data gaps in proposed sampling intervals and laboratory analysis. At the meeting the USEPA noted that some of these concerns were previously presented by the USEPA on a spreadsheet summarizing sediment analytical results/depths and describing potential data gaps. Further discussion regarding the review of data gaps is described below in the following section under "Sediment Sample Data Gaps".

A summary of the sample interval selection criteria proposed sampling is presented below. As described and discussed during the meeting, sample depth interval selection will be based on a combination of pre-determined intervals and field indicators of contamination (e.g., odors, elevated volatile vapors, staining, etc.) if observed in sediment cores. Sediment intervals exhibiting similar indicators in new and proposed borings will be sampled and analyzed as discussed at the meeting, and described as follows:

Determination of Sample Intervals for Selected Prior Sediment Boring Locations Sampled in 2002/2014

- Advance each boring to refusal or to 20 feet, whichever is first encountered;
- Record observations of sediment lithology, possible contamination, and other physical characteristics for the entire core;
- Screen the entire core for field indicators of contamination (detectable indicators of contamination: e.g., odors, elevated VOCs detected with field instruments, staining, etc.);
- Collect sediment from each 0-0.5-foot interval for analysis of EPH, and if needed, any

parameters missing from among the established analytical suite (i.e., TCL VOCs/BNs, EPH, TAL Metals).

- Collect sediment from 2-2.5 feet or from the discrete interval exhibiting the worst-case conditions based on field screening and analyze for the parameters noted above.

Determination of Sample Intervals for New Sample Locations

- Advance each boring to refusal or to 20 feet, whichever is first encountered;
- Record observations of sediment lithology, possible contamination, and other physical characteristics for the entire core;
- Screen the entire core for field indicators of contamination (detectable indicators of contamination: e.g., odors, elevated VOC vapors detected with field instruments, staining, etc.);
- Collect sediment from each 0-0.5-foot interval for analysis of the established analytical suite (i.e., TCL VOCs/BNs, EPH, TAL Metals)
- Collect sediment from the 2-2.5-foot interval or from the discrete interval exhibiting the worst-case conditions based on field screening and analyze for the parameters noted above.

The physical parameters including pH, TOC, and grain size determination will also be analyzed as shown on the Spreadsheet and revised Table 1 (see discussion below). It was determined that the sediment in previously-sampled areas is adequately characterized with respect to these parameters (i.e., pH, TOC, and grain size). However, samples will be collected for analysis of these parameters from selected depth intervals in the new sediment borings, i.e., borings along transects SED-22 through SED 25, from SED-WCBG-1 to WCBG-8, and where possible from borings in Spa Spring Creek.

Sediment Sample Data Gaps

As a result of the meeting, TRC conducted an evaluation of the existing data and objectives of the proposed sampling based on the discussion at the meeting and agency comments. The USEPA raised a question about the potential for using a spreadsheet that was previously sent to Chevron and TRC as an example of summarizing sediment data for data gap review. TRC reviewed the last version of the spreadsheet, which was incomplete, and evaluated other options for use of a spreadsheet to evaluate sediment sampling plan data gaps. The attached Sediment Data Gap Analysis Spreadsheet (“the Spreadsheet”; Attachment 1) was developed by TRC to aid data gap identification and indicate how the proposed sampling will fill data gaps. The Spreadsheet lists each sediment sampling location and related information including:

- Sample number/depth interval;
- Historical analytical parameters completed at prior sediment sample locations/intervals, and proposed analysis for selected sampling intervals to address data gaps; and,
- Proposed analysis at new sediment sample locations/intervals.

TRC discussed and demonstrated the use of the Spreadsheet with Mr. Ricky Vargas of the USEPA during a Skype teleconference on August 14, 2019. Mr. Vargas indicated that the Spreadsheet

would be useful for identifying potential data gaps; an electronic version of the Spreadsheet (in Excel) is being forwarded via email. An electronic copy of the Spreadsheet is also included with this submission in Attachment 1 on CDROM.

In addition to the Spreadsheet (Attachment 1), Table 1 from the SFSAP has been revised to reflect the sampling changes noted in this letter (see Attachment 2). Figures 2, and 2A of the SFSAP have also been revised and are attached. The attached, revised versions of the Figures and Tables were updated to be consistent with the data gaps and proposed sampling to fill those gaps indicated per the Spreadsheet.

Physical Delineation

As noted at the meeting, the focus of the waterway investigation is to characterize and delineate the contaminated soft sediment in Spa Spring Creek and Woodbridge Creek that exists above the strata underlying the creek beds (i.e., above the underlying till/alluvium), as supported by the following:

- The extent of soft sediment is defined horizontally by the banks of each waterway and vertically by refusal on the underlying till/alluvium;
- The bathymetric survey and lithologic profile for the mouth of Woodbridge Creek, as presented on the Bathymetric Survey and lithologic profile included in the (November 2016 Supplemental Ecological Evaluation Report [SEER], indicates that soft sediment does not extend into the Arthur Kill; and,
- The absence of soft sediment in the Arthur Kill is attributable to tidal scouring, periodic dredging/channel deepening, and large vessel propeller effects.

The laboratory sample analytical results provide a basis for characterization of the soft sediments within the limits of the waterways. However, except for in the upstream direction, the delineation of waterway soft sediment is a function of the physical waterway limits (e.g., banks) and the extent of the downstream limit of the soft sediment (i.e., based on presence/absence and bathymetry, per the SEER). These details and supporting data will be included in a final sediment investigation report (“the final sediment report”).

Light, Non-Aqueous Phase Liquid (LNAPL)

The LNAPL areas proximal to the waterways were presented at the meeting on Facility maps and discussed with respect to their current status. It was noted that the LNAPL areas have been significantly reduced in mass and extent, that LNAPL is immobile, and that the reduced LNAPL areas are not current sources of sediment contamination to adjacent waterways. The following was stated in the July 2, 2019 RTC letter:

The LNAPL areas were previously defined, are currently undergoing remediation, and as stated in the 2003 BEE, “Pathways for contaminant migration from SWMUs and AOCs to environmentally sensitive natural resources do not appear to be complete.”

It should be noted that the above text refers to the then current LNAPL conditions, which have further improved (reduced) over the intervening 16 years. However, the text was not intended to dismiss the possible historical LNAPL mobility or related potential discharges no longer evident today. This will be clarified in a final sediment report that will include the results of the sediment sampling obtained from implementation of the SFSAP.

Cross Sections

As discussed with the NJDEP at the meeting, lithologic cross-sections will be prepared for selected areas of the Facility and included in the final sediment report.

Specific Responses to March 1, 2019 Comments by USEPA/NJDEP

The NJDEP noted that clarification was needed regarding Chevron's responses to Comment Nos. 4 and 7 in the Response to Comments (RTC) letter submitted with the revised SFSAP on July 2, 2019. For convenience, the USEPA's Comments 4 and 7 and Chevron's responses are re-stated, below followed by supplemental discussion.

USEPA Comment 4. Section 2.1 Sample Collection, Page 5, Table 1 and Figure 2: The document states, "In summary the proposed sample locations were selected to ...revisit previously sampled locations to supplement analysis with shallow and/or deeper samples as well as EPH where it had not previously been analyzed." However, it is unclear if this goal will be achieved since the previous sample locations/intervals were not referenced in the document, in any form, for direct comparison. Further review of the document suggests that few samples will be collected at depth (greater than 0.5 ft. samples) for any contaminant of concern (COC). The document should be revised to include a table comparing past sampling intervals/depths to those proposed herein, so that we can confirm that the sampling program is adequate to sufficiently delineate the impacts to the waterbodies.

RTC-Response 4: *The Revised Table 1 provides a comparative summary and the location of proposed and historical samples, depths, and analytical parameters. Regarding the depth of proposed sampling, it should be noted that the biologically active zone, or benthic zone is defined by the NJDEP as 0-0.5 feet and would be of primary concern with respect to sediment impacts. It was also agreed at the September 17, 2018 meeting and in the subsequent November 2018 responses to the USEPA's August 2018 comment letter that further sampling (i.e., of “hotspots”) is not necessary to meet the requirements of the 2013 HSWA permit, and that the existing and proposed samples adequately characterize and delineate contaminants in sediment. Further, petroleum constituent analysis (i.e., Volatile Organic Compounds [VOCs]; Base Neutral Compounds [BNs]) has been completed throughout the waterways to various depths in and below*

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the benthic zone. The horizontal, downstream and bank-to-bank physical limit of contaminated sediments in Woodbridge Creek was determined by completing a bathymetric survey and bottom profile analysis. The bathymetric survey revealed a steep submarine escarpment at the Woodbridge Creek/Arthur Kill confluence (Figure 6 of Attachment 1), indicating the terminus of soft sediments at the contact with the Arthur Kill. Therefore, further sampling to define the vertical/horizontal extent of EPH or other contaminants beyond that proposed in the SFSAP is not warranted.

Comment 4 Discussion: It is our understanding that the USEPA's request for clarification pertains to the data gap concerns noted above. We believe that these data gaps are addressed by the enclosed Spreadsheet, and the revised tables and figures included with this letter. The Spreadsheet identifies additional depth intervals where re-sampling of sediment is warranted for specific parameters. Therefore, additional sampling and analysis will be performed as appropriate, and laboratory sample analytical results will be provided in the final sediment report.

USEPA Comment 7. Section 2.1 Sample Collection, Data Gap Samples EPH Analysis at Existing Boring Locations, Page 6: The document states, "Chevron will resample all past locations on Woodbridge Creek and Spa Spring Creek for EPH analysis where EPH was not analyzed previously." However, a review of the document suggests the proposed additional EPH analysis is generally limited to the shallow 0 to 0.5 ft. interval where analysis was conducted for other COCs. Further review of the available data suggests that collection of subsurface (at-depth) samples were previously limited in scope, such that the majority of samples were not analyzed for extractable petroleum hydrocarbons (EPH) or other COCs below 0 to 0.5 ft. interval including, but not limited to: SED-01 A/B/C; SED-2C, SED-3A, SED- 4B; SED-05A/B/C, SED-06A/C, SED-07A/B/C; SED-08A/C; SED-09B; SED-10A/B, SED-11C, etc. The document should be revised to include additional at-depth (below 0.5 ft.) sample collection/analysis for EPH at all historic and proposed sample locations/transects. In addition, please specify if/when the samples hit bedrock and the corresponding depth.

RTC-Response 7: Please refer to Response 4. It was agreed at the September 17, 2018 meeting and in the November 2018 RTC that "Chevron will resample all past locations for EPH analysis where EPH was not analyzed previously." The proposed additional sample depths are provided in revised Table 1. No other additional sampling is proposed. The USEPA's request for information on depth to bedrock appears to be a misunderstanding, since bedrock was not encountered during sampling, whereas refusal was encountered. The vertical limit of soft sediment in Woodbridge Creek coincides with the top of the underlying glacial till, which is sufficiently competent and refused the Vibracore drilling stem. As reported in Section 2 of the SEER (Attachment 1), bedrock was encountered in terrestrial borings from 65-85 feet below grade, well below the bed of Woodbridge Creek.

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Comment 7 Discussion: The USEPA's concerns noted in Comment 7 are similar to those mentioned in Comment 4 regarding data gaps, and the response is similar. The existing data were reviewed for all sediment samples, including the specific samples noted by the USEPA in this comment. As noted under the Comment 4 discussion, additional depth intervals were identified where additional sampling and analysis will be performed, and all related data will be provided in the final sediment report. Regarding the USEPA's request on specifying the depth to bedrock, it was agreed at the meeting that Chevron would provide the depth to refusal, where encountered, whether on bedrock or other competent material. Complete boring logs and stratigraphic cross-sections will be provided with the final sediment report.

Analytical Results (Refer to USEPA Comment5/RTC Response 5)

During the meeting, the NJDEP noted an apparent discrepancy regarding the total concentrations of polycyclic aromatic hydrocarbons (PAHs) reported for samples SED-06-B and SED-09-C in the above-referenced response. The total PAHs reported for sediment samples SED-06-B and SED-09-C in the RTC were 0.71 mg/kg and 69.85 mg/kg, respectively, whereas the actual total PAH concentrations for these samples were 2.15 mg/kg and 140 mg/kg, respectively. The higher upstream concentrations of PAHs at the SED-09 transect, and the associated EPH concentration of 27,000 mg/kg versus those detected at SED-06 suggest a source of contamination other than the Facility. The laboratory sample analytical results for PAHs in sediments are summarized in Table 9-8 of the 2003 BEE included in Attachment 3 and on Figure 4.

As a result of our review of this issue, TRC identified several minor discrepancies regarding the data presentation in Tables 9-8, and on Figure 4 and Table IV of the 2016 SEER, though none that would change the sediment characterization. Specifically, analytical results for benzo(a)anthracene and benzo(a)pyrene were incorrectly shown on Figure 4, as they appear to have been switched in the data boxes, but they were correctly shown on Table IV of the SEER. The PAHs shown on Figure 4 for sample SED-01-C were below the Effects Range Low (ER-L) and Effects Range Moderate (ER-M) ESC but shown incorrectly as above these criteria (bolded/highlighted text). These inconsistencies have been corrected in the revised Table IV and Table 9-8, and the revised Figure 4, which are included in Attachments 3 and 4, respectively.

We trust that this letter and attachments address the USEPA's questions and concerns raised during the August 7, 2019 meeting. As noted at the meeting, Chevron respectfully requests an expedited review and approval by the end of August, which is necessary in order to complete the RFI for the surface water bodies and meet the RCRA 2020 goal.

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Please contact the undersigned if you have any questions or if you require any additional information.

Sincerely,



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Chevron_PA_RFI_SedWP_Rev_Aug_21_2019

ATTACHMENT 1:

SEDIMENT DATA GAP ANALYSIS SPREADSHEET
(PAPER COPY AND CDROM)

Sediment Data Gap Analysis Spreadsheet
 Former Perth Amboy Chevron Facility
 Perth Amboy, New Jersey

Waterbody	Location ID	Field ID	Lab ID	Matrix	Sample Top	Sample Botm	Sample Date	Existing /Proposed	BN	EPH	Metals	VOC	pH/TOC/Grain Size
Woodbridge Creek	SED-01-A	SED-01-A/0-6	3967881	SEDIMENT	0.0	0.5	12/20/2002	Existing	X	X	X		X
Woodbridge Creek	SED-01-A	SED-01-A/6-12	3967880	SEDIMENT	0.5	1.0	12/20/2002	Existing		X		X	
Woodbridge Creek	SED-01-A	SED-01-A/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-01-B	SED-01-B/0-6	3967883	SEDIMENT	0.0	0.5	12/20/2002	Existing	X	X	X		X
Woodbridge Creek	SED-01-B	SED-01-B/6-12	3967882	SEDIMENT	0.5	1.0	12/20/2002	Existing		X		X	
Woodbridge Creek	SED-01-B	SED-01-B/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-01-C	SED-01-C/0-6	3967905	SEDIMENT	0.0	0.5	12/20/2002	Existing	X	X	X		
Woodbridge Creek	SED-01-C	SED-01-C/6-12	3967904	SEDIMENT	0.5	1.0	12/20/2002	Existing		X		X	
Woodbridge Creek	SED-01-C	SED-01-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-02-A	SED-02-A/0-6	3967892	SEDIMENT	0.0	0.5	12/20/2002	Existing	X		X		X
Woodbridge Creek	SED-02-A	SED-02-A/6-12	3967891	SEDIMENT	0.5	1.0	12/20/2002	Existing				X	
Woodbridge Creek	SED-02-A(R)	SED-02-A(R)/0-6		SEDIMENT	0.0	0.5		Proposed	X	X	X		
Woodbridge Creek	SED-02-A(R)	SED-02-A(R)/6-12		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-02-A(R)	SED-02-A(R)	JB62621-2	SEDIMENT	6.0	6.5	3/21/2014	Existing	X	X	X	X	X
Woodbridge Creek	SED-02-B	SED-02-B/0-6	3967889	SEDIMENT	0.0	0.5	12/20/2002	Existing	X		X		X
Woodbridge Creek	SED-02-B	SED-02-B/6-12	3967887	SEDIMENT	0.5	1.0	12/20/2002	Existing				X	
Woodbridge Creek	SED-02-B(R)	SED-02-B(R)/0-6		SEDIMENT	0.0	0.5		Proposed	X	X	X		
Woodbridge Creek	SED-02-B(R)	SED-02-B(R)/6-12		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-02-B(R)	SED-02-B(R)	JB62621-1	SEDIMENT	3.5	4.0	3/21/2014	Existing	X	X	X	X	X
Woodbridge Creek	SED-02-C	SED-02-C/0-6	3967894	SEDIMENT	0.0	0.5	12/20/2002	Existing	X		X		X
Woodbridge Creek	SED-02-C	SED-02-C/6-12	3967893	SEDIMENT	0.5	1.0	12/20/2002	Existing				X	
Woodbridge Creek	SED-02-C(R)	SED-02-C(R)/0-6		SEDIMENT	0.0	0.5		Proposed	X		X		X
Woodbridge Creek	SED-02-C(R)	SED-02-C(R)/6-12		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-02-C(R)	SED-02-C(R)/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X-FD	X-FD	X-FD	X-FD	
Woodbridge Creek	SED-03-A	SED-03-A/0-6	3967919	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-03-A	SED-03-A/6-12	3967918	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-03-A	SED-03-A/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-03-B	SED-03-B/0-6	3967857	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-03-B	SED-03-B/6-12	3967856	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-03-B	SED-03-B(R)	JB62513-7	SEDIMENT	1.5	2.0	3/20/2014	Existing	X	X	X	X	X
Woodbridge Creek	SED-03-B	SED-03-B(R)	JB62513-8	SEDIMENT	4.5	5.0	3/20/2014	Existing	X	X	X	X	X
Woodbridge Creek	SED-03-C	SED-03-C/0-6	3967921	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-03-C	SED-03-C/6-12	3967920	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-03-C	SED-03-C/12-18	3967922	SEDIMENT	1.0	1.5	12/19/2002	Existing	X	X	X	X	X
Woodbridge Creek	SED-03-C	SED-03-C(R)	JB62513-5	SEDIMENT	1.5	2.0	3/20/2014	Existing	X	X	X	X	X
Woodbridge Creek	SED-03-C	SED-03-C/30-36	3967923	SEDIMENT	2.5	3.0	12/19/2002	Existing	X	X	X	X	X
Woodbridge Creek	SED-03-C	SED-03-C(R)	JB62513-6	SEDIMENT	6.0	6.5	3/20/2014	Existing	X	X	X	X	X
Woodbridge Creek	SED-04-A	SED-04-A/0-6	3967911	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-04-A	SED-04-A/6-12	3967910	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-04-A	SED-04-A/39-45	3967912	SEDIMENT	3.3	3.8	12/19/2002	Existing	X	X	X	X	X ¹
Woodbridge Creek	SED-04-B	SED-04-B/0-6	3967915	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-04-B	SED-04-B/6-12	3967914	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-04-B	SED-04-B/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	

Sediment Data Gap Analysis Spreadsheet
 Former Perth Amboy Chevron Facility
 Perth Amboy, New Jersey

Waterbody	Location ID	Field ID	Lab ID	Matrix	Sample Top	Sample Botm	Sample Date	Existing /Proposed	BN	EPH	Metals	VOC	pH/TOC/Grain Size
Woodbridge Creek	SED-04-C	SED-04-C/0-6	3967917	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-04-C	SED-04-C/6-12	3967916	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-04-C	SED-04-C(R)	JB62513-4	SEDIMENT	1.5	2.0	3/20/2014	Existing	X	X	X	X	X
Woodbridge Creek	SED-04-C	SED-04-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-05-A	SED-05-A/0-6	3967907	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-05-A	SED-05-A/6-12	3967906	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-05-A	SED-05-A/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-05-B	SED-05-B/0-6	3967909	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-05-B	SED-05-B/6-12	3967908	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-05-B	SED-05-B/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-05-C	SED-05-C/0-6	3967855	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-05-C	SED-05-C/6-12	3967854	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-05-C	SED-05-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-06-A	SED-06-A/0-6	3967875	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-06-A	SED-06-A/6-12	3967874	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-06-A	SED-06-A/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-06-B	SED-06-B/0-6	3967879	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-06-B	SED-06-B/6-12	3967878	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-06-B	SED-06-B(R)	JB62513-3	SEDIMENT	4.0	4.5	3/20/2014	Existing	X	X	X	X	X
Woodbridge Creek	SED-06-C	SED-06-C/0-6	3967867	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-06-C	SED-06-C/6-12	3967866	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-06-C	SED-06-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-09-A	SED-09-A/0-6	3967877	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-09-A	SED-09-A/6-12	3967876	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-09-A	SED-09-A(R)	JB62513-1	SEDIMENT	3.0	3.5	3/20/2014	Existing	X	X	X	X	X
Woodbridge Creek	SED-09-B	SED-09-B/0-6	3967869	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-09-B	SED-09-B/6-12	3967868	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-09-B	SED-09-B/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-09-C	SED-09-C/0-6	3967864	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-09-C	SED-09-C/6-12	3967863	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-09-C	SED-09-C/33-39	3967865	SEDIMENT	2.8	3.3	12/19/2002	Existing	X	X	X	X	X
Woodbridge Creek	SED-09-C	SED-09-C(R)	JB62513-2	SEDIMENT	4.5	5.0	3/20/2014	Existing	X	X	X	X	X
Woodbridge Creek	SED-10-A	SED-10-A/0-6	3967871	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-10-A	SED-10-A/6-12	3967870	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-10-A	SED-10-A/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-10-B	SED-10-B/0-6	3967873	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-10-B	SED-10-B/6-12	3967872	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-10-B	SED-10-B/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-10-C	SED-10-C/0-6	3967862	SEDIMENT	0.0	0.5	12/19/2002	Existing	X	X	X		X
Woodbridge Creek	SED-10-C	SED-10-C/6-12	3967861	SEDIMENT	0.5	1.0	12/19/2002	Existing		X		X	
Woodbridge Creek	SED-10-C	SED-10-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Woodbridge Creek	SED-19-B	SED-19-B/0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		
Woodbridge Creek	SED-19-B	SED-19-B/0.5-1.0		SEDIMENT	0.5	1.0		Proposed		X		X	
Woodbridge Creek	SED-19-B	SED-19-B	JB62621-3	SEDIMENT	6.0	6.5	3/21/2014	Existing	X	X	X	X	X

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Waterbody	Location ID	Field ID	Lab ID	Matrix	Sample Top	Sample Botm	Sample Date	Existing /Proposed	BN	EPH	Metals	VOC	pH/TOC/Grain Size
Woodbridge Creek	SED-19-C	SED-19-C/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		
Woodbridge Creek	SED-19-C	SED-19-C/0.5-1.0		SEDIMENT	0.5	1.0		Proposed		X		X	
Woodbridge Creek	SED-19-C	SED-19-C	JB62621-4	SEDIMENT	7.5	8.0	3/21/2014	Existing	X	X	X	X	X
Woodbridge Creek	SED-22-A	SED-22-A/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-22-A	SED-22-A/0.5-1.0		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-22-A	SED-22-A/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-22-B	SED-22-B/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-22-B	SED-22-B/0.5-1.0		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-22-B	SED-22-B/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-22-C	SED-22-C/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-22-C	SED-22-C/0.5-1.0		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-22-C	SED-22-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-23-A	SED-23-A/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-23-A	SED-23-A/0.5-1.0		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-23-A	SED-23-A/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-23-B	SED-23-B/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-23-B	SED-23-B/0.5-1.0		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-23-B	SED-23-B/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-23-C	SED-23-C/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-23-C	SED-23-C/0.5-1.0		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-23-C	SED-23-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-24-A	SED-24-A/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-24-A	SED-24-A/0.5-1.0		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-24-A	SED-24-A/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-24-B	SED-24-B/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-24-B	SED-24-B/0.5-1.0		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-24-B	SED-24-B/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-24-C	SED-24-C/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-24-C	SED-24-C/0.5-1.0		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-24-C	SED-24-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-25-A	SED-25-A/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-25-A	SED-25-A/0.5-1.0		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-25-A	SED-25-A/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-25-B	SED-25-B/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-25-B	SED-25-B/0.5-1.0		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-25-B	SED-25-B/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-25-C	SED-25-C/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-25-C	SED-25-C/0.5-1.0		SEDIMENT	0.5	1.0		Proposed				X	
Woodbridge Creek	SED-25-C	SED-25-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-WCBG-1	SED-WCBG-1/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-WCBG-1	SED-WCBG-1/0.5-1.0		SEDIMENT	0.5	1.0		Proposed		X		X	X
Woodbridge Creek	SED-WCBG-1	SED-WCBG-1/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-WCBG-2	SED-WCBG-2/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-WCBG-2	SED-WCBG-2/0.5-1.0		SEDIMENT	0.5	1.0		Proposed		X		X	

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Waterbody	Location ID	Field ID	Lab ID	Matrix	Sample Top	Sample Botm	Sample Date	Existing /Proposed	BN	EPH	Metals	VOC	pH/TOC/Grain Size
Woodbridge Creek	SED-WCBG-2	SED-WCBG-2/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-WCBG-3	SED-WCBG-3/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-WCBG-3	SED-WCBG-3/0.5-1.0		SEDIMENT	0.5	1.0		Proposed		X		X	
Woodbridge Creek	SED-WCBG-3	SED-WCBG-3/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-WCBG-4	SED-WCBG-4/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-WCBG-4	SED-WCBG-4/0.5-1.0		SEDIMENT	0.5	1.0		Proposed		X		X	
Woodbridge Creek	SED-WCBG-4	SED-WCBG-4/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-WCBG-5	SED-WCBG-5/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-WCBG-5	SED-WCBG-5/0.5-1.0		SEDIMENT	0.5	1.0		Proposed		X		X	
Woodbridge Creek	SED-WCBG-5	SED-WCBG-5/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-WCBG-6	SED-WCBG-6/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-WCBG-6	SED-WCBG-6/0.5-1.0		SEDIMENT	0.5	1.0		Proposed		X		X	
Woodbridge Creek	SED-WCBG-6	SED-WCBG-6/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-WCBG-7	SED-WCBG-7/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-WCBG-7	SED-WCBG-7/0.5-1.0		SEDIMENT	0.5	1.0		Proposed		X		X	
Woodbridge Creek	SED-WCBG-7	SED-WCBG-7/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Woodbridge Creek	SED-WCBG-8	SED-WCBG-8/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Woodbridge Creek	SED-WCBG-8	SED-WCBG-8/0.5-1.0		SEDIMENT	0.5	1.0		Proposed		X		X	
Woodbridge Creek	SED-WCBG-8	SED-WCBG-8/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Spa Spring Creek	SED-07-A	SED-07-A/0-6	3967897	SEDIMENT	0.0	0.5	12/20/2002	Existing	X	X	X		X
Spa Spring Creek	SED-07-A	SED-07-A/6-12	3967896	SEDIMENT	0.5	1.0	12/20/2002	Existing		X		X	
Spa Spring Creek	SED-07-A	SED-07-A/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Spa Spring Creek	SED-07-B	SED-07-B/0-6	3967859	SEDIMENT	0.0	0.5	12/20/2002	Existing	X	X	X		X
Spa Spring Creek	SED-07-B	SED-07-B/6-12	3967858	SEDIMENT	0.5	1.0	12/20/2002	Existing		X		X	
Spa Spring Creek	SED-07-B	SED-07-B/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Spa Spring Creek	SED-07-C	SED-07-C/0-6	3967901	SEDIMENT	0.0	0.5	12/20/2002	Existing	X	X	X		X
Spa Spring Creek	SED-07-C	SED-07-C/6-12	3967900	SEDIMENT	0.5	1.0	12/20/2002	Existing		X		X	
Spa Spring Creek	SED-07-C	SED-07-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Spa Spring Creek	SED-08-A	SED-08-A/0-6	3967903	SEDIMENT	0.0	0.5	12/20/2002	Existing	X	X	X		X
Spa Spring Creek	SED-08-A	SED-08-A/6-12	3967902	SEDIMENT	0.5	1.0	12/20/2002	Existing		X		X	
Spa Spring Creek	SED-08-A	SED-08-A/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Spa Spring Creek	SED-08-C	SED-08-C/0-6	3967885	SEDIMENT	0.0	0.5	12/20/2002	Existing	X	X	X		X
Spa Spring Creek	SED-08-C	SED-08-C/6-12	3967884	SEDIMENT	0.5	1.0	12/20/2002	Existing		X		X	
Spa Spring Creek	SED-08-C	SED-08-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Spa Spring Creek	SED-11-C	SED-11-C/0-6	3967899	SEDIMENT	0.0	0.5	12/20/2002	Existing	X	X	X		X
Spa Spring Creek	SED-11-C	SED-11-C/6-12	3967898	SEDIMENT	0.5	1.0	12/20/2002	Existing		X		X	
Spa Spring Creek	SED-11-C	SED-11-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Spa Spring Creek	SED-20-A	SED-20-A	JB60857-1	SEDIMENT	0.0	0.5	2/28/2014	Existing	X	X	X	X	X
Spa Spring Creek	SED-20-A	SED-20-A/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Spa Spring Creek	SED-20-C	SED-20-C	JB60857-2	SEDIMENT	0.0	0.5	2/28/2014	Existing	X	X	X	X	X
Spa Spring Creek	SED-20-C	SED-20-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Spa Spring Creek	SED-21-A	SED-21-A	JB60857-4	SEDIMENT	0.0	0.5	2/28/2014	Existing	X	X	X	X	X
Spa Spring Creek	SED-21-A	SED-21-A/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Spa Spring Creek	SED-21-C	SED-21-C	JB60857-3	SEDIMENT	0.0	0.5	2/28/2014	Existing	X	X	X	X	X

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 Perth Amboy, New Jersey

Waterbody	Location ID	Field ID	Lab ID	Matrix	Sample Top	Sample Botm	Sample Date	Existing /Proposed	BN	EPH	Metals	VOC	pH/TOC/Grain Size
Spa Spring Creek	SED-21-C	SED-21-C/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD	X - FD	X - FD	X - FD	
Spa Spring Creek	SED-SSBG-1	SED-SSBG-1/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Spa Spring Creek	SED-SSBG-1	SED-SSBG-1/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Spa Spring Creek	SED-SSBG-2	SED-SSBG-2/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Spa Spring Creek	SED-SSBG-2	SED-SSBG-2/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Spa Spring Creek	SED-SSBG-3	SED-SSBG-3/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Spa Spring Creek	SED-SSBG-3	SED-SSBG-3/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				
Spa Spring Creek	SED-SSBG-4	SED-SSBG-4/0.0-0.5		SEDIMENT	0.0	0.5		Proposed	X	X	X		X
Spa Spring Creek	SED-SSBG-4	SED-SSBG-4/2.0-2.5		SEDIMENT	2.0	2.5		Proposed	X - FD				

X = previously analyzed

1 = previously analyzed for Grain Size only

X = Proposed sample analysis

X - FD = Proposed sample analysis with interval determined by field screening

Total Proposed # of Samples: 86 150 87 82 49

ATTACHMENT 2:

REVISED SUPPLEMENTAL FIELD SAMPLING and ANALYSIS PLAN
TABLE 1

Table 1 (Revised August 2019)
Proposed Sediment Sampling
Former Perth Amboy Chevron Facility
Perth Amboy, New Jersey

Proposed Sample Name	Sample Depth	Analysis	Location	Correlated Historic Samples	Historic Sample Depth	Historic Analysis	Explanation
SED-WCBG-1 ²	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek		No historic sample.		Background Sample
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-WCBG-2 ²	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek		No historic sample.		Background Sample
	0.5-1.0	VOCs					
	2.0-2.5	EPH, VOCs, SVOCs, Metals					
SED-WCBG-3 ²	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek		No historic sample.		Background Sample
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-WCBG-4 ²	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek		No historic sample.		Background Sample
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-WCBG-5 ²	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek		No historic sample.		Background Sample
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-WCBG-6 ²	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek		No historic sample.		Background Sample
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-WCBG-7 ²	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek		No historic sample.		Background Sample
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-WCBG-8 ²	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek		No historic sample.		Background Sample
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-01-A	0.0-0.5	EPH	Woodbridge Creek	SED-01-A	0.0-0.5	Metals	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect was originally collected to address downstream impacts from offsite sources. The transect is adjacent to the former Hess and Shell Facilities and is not bordered by Chevron on either side.
	0.5-1.0	EPH			0.5-1.0	VOCs and BNs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-01-B	0.0-0.5	EPH	Woodbridge Creek	SED-01-B	0.0-0.5	Metals	
	0.5-1.0	EPH			0.5-1.0	VOCs and BNs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-01-C	0.0-0.5	EPH	Woodbridge Creek	SED-01-C	0.0-0.5	Metals	
	0.5-1.0	EPH			0.5-1.0	VOCs and BNs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-02-A(R)	0.0-0.5	EPH	Woodbridge Creek	SED-02-A (see explanation)	0.0-0.5	BN and Metals	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect was originally collected to address downstream impacts from onsite sources. This includes a former discharge trench which sewerage from the two former administrations buildings and runoff from AOC 50 (Bulk Station) discharged into. These samples are offset from their original locations due to underground utilities. The transect is adjacent to the former Hess and Shell Facilities and is not bordered by Chevron on either side. See utilities shown in the inset on Figure 2A.
	0.5-1.0	EPH			0.5-1.0	VOCs	
	6.0-6.5	BNs, Metals, VOCs			6.0-6.5	Grain Size, TOC, pH, EPH	
SED-02-B(R)	0.0-0.5	EPH	Woodbridge Creek	SED-02-B (see explanation)	0.0-0.5	BN and Metals	
	0.5-1.0	EPH			0.5-1.0	VOCs	
	3.5-4.0	BNs, Metals, VOCs			3.5-4.0	Grain Size, TOC, pH, EPH	
SED-02-C(R)	0.0-0.5	EPH	Woodbridge Creek	SED-02-C (see explanation)	0.0-0.5	BN and Metals	
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					

Table 1 (Revised August 2019)
Proposed Sediment Sampling
Former Perth Amboy Chevron Facility
Perth Amboy, New Jersey

Proposed Sample Name	Sample Depth	Analysis	Location	Correlated Historic Samples	Historic Sample Depth	Historic Analysis	Explanation
SED-03-A	0.0-0.5	EPH	Woodbridge Creek	SED-03-A	0.0-0.5	BN and Metals	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect was located downstream from SWMU 7, 16, 17, 18 (TEL Burials Areas), 24 (TEL Weathering Area), 31 (Effluent Treatment Plant), 41 (Drying Area) and PAOC 21 (Colonial Pipeline). It is adjacent to SWMU 40 (Old Pond). Aerial photos indicate that the No.1 Separator, which is described as API Separator #1 in the January 1965 Interstate Sanitation Commission Report titled Location of City Sewers Adjacent to Industrial Plants Bordering the Arthur Kill in New Jersey (ISC Sewer Report), was connected to SWMU 40 and discharged directly adjacent to this location. This area also addresses impacts from the SWMU 40 LNAPL Areas.
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-03-B(R)	0.0-0.5	EPH	Woodbridge Creek	SED-03-B	0.0-0.5	BN and Metals	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect was located downstream from SWMU 7, 16, 17, 18 (TEL Burials Areas), 24 (TEL Weathering Area), 31 (Effluent Treatment Plant), 41 (Drying Area) and PAOC 21 (Colonial Pipeline). It is adjacent to SWMU 40 (Old Pond). Aerial photos indicate that the No.1 Separator, which is described as API Separator #1 in the January 1965 Interstate Sanitation Commission Report titled Location of City Sewers Adjacent to Industrial Plants Bordering the Arthur Kill in New Jersey (ISC Sewer Report), was connected to SWMU 40 and discharged directly adjacent to this location. This area also addresses impacts from the SWMU 40 LNAPL Areas.
	0.5-1.0	EPH			0.5-1.0	VOCs	
	1.5-2.0	BNs, Metals, VOCs			1.5-2.0	Grain Size, TOC, pH EPH	
	4.5-5.0	BNs, Metals, VOCs			4.5-5.0	Grain Size, TOC, pH EPH	
SED-03-C(R)	0.0-0.5	EPH	Woodbridge Creek	SED-03-C	0.0-0.5	BN and Metals	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect was located downstream from SWMU 7, 16, 17, 18 (TEL Burials Areas), 24 (TEL Weathering Area), 31 (Effluent Treatment Plant), 41 (Drying Area) and PAOC 21 (Colonial Pipeline). It is adjacent to SWMU 40 (Old Pond). Aerial photos indicate that the No.1 Separator, which is described as API Separator #1 in the January 1965 Interstate Sanitation Commission Report titled Location of City Sewers Adjacent to Industrial Plants Bordering the Arthur Kill in New Jersey (ISC Sewer Report), was connected to SWMU 40 and discharged directly adjacent to this location. This area also addresses impacts from the SWMU 40 LNAPL Areas.
	0.5-1.0	EPH			0.5-1.0	VOCs	
	1.0-1.5	EPH			1.0-1.5	Grain Size, TOC, pH, EPH	
	1.5-2.0	BNs, Metals, VOCs			1.5-2.0	VOCs	
	2.5-3.0	EPH			2.5-3.0	VOCs, BNs, Metals	
	6.0-6.5	BNs, Metals, VOCs			6.0-6.5	Grain Size, TOC, pH, EPH	
SED-04-A	0.0-0.5	EPH	Woodbridge Creek	SED-04-A	0.0-0.5	BN and Metals	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect is adjacent to SWMU 24 (TEL Weathering Area), SWMU 31 (Effluent Treatment Plant), and SWMU 41 and downgradient of discharge point discussed in SED-05 Transect.
	0.5-1.0	EPH			0.5-1.0	VOCs	
	3.25-3.75	EPH, Metals			3.25-3.75	VOCs, BNs	
SED-04-B	0.0-0.5	EPH	Woodbridge Creek	SED-04-B	0.0-0.5	BNs and Metals	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect is adjacent to SWMU 24 (TEL Weathering Area), SWMU 31 (Effluent Treatment Plant), and SWMU 41 and downgradient of discharge point discussed in SED-05 Transect.
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-04-C(R)	0.0-0.5	EPH	Woodbridge Creek	SED-04-C	0.0-0.5	Metals	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect is adjacent to SWMU 24 (TEL Weathering Area), SWMU 31 (Effluent Treatment Plant), and SWMU 41 and downgradient of discharge point discussed in SED-05 Transect.
	0.5-1.0	EPH			0.5-1.0	VOCs and BNs	
	1.5-2.0	BNs, Metals, VOCs			1.5-2.0	Grain Size, TOC, pH, EPH	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-05-A	0.0-0.5	EPH	Woodbridge Creek	SED-05-A	0.0-0.5	Metals and BNs	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect is adjacent to SWMU 31 (Effluent Treatment Plant) and SWMU 41 (Drying Area). In addition, this location is in line with the current discharge from the Effluent plant, as well as the location of the historic discharge point of SWMU 35 (No. 4 separator - Settling Basin in ISC Sewer Report). SWMU 1 (North Field Basin) and SWMU 2 (Surge Pond) also historically discharged at this point through Separator No.2 (API Separator #2 in ISC Sewer Report) and Separator No. 3. This location also addresses the Former SWMU 41 LNAPL area and the Former NF4 LNAPL Area.
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-05-B	0.0-0.5	EPH	Woodbridge Creek	SED-05-B	0.0-0.5	Metals and BNs	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect is adjacent to SWMU 31 (Effluent Treatment Plant) and SWMU 41 (Drying Area). In addition, this location is in line with the current discharge from the Effluent plant, as well as the location of the historic discharge point of SWMU 35 (No. 4 separator - Settling Basin in ISC Sewer Report). SWMU 1 (North Field Basin) and SWMU 2 (Surge Pond) also historically discharged at this point through Separator No.2 (API Separator #2 in ISC Sewer Report) and Separator No. 3. This location also addresses the Former SWMU 41 LNAPL area and the Former NF4 LNAPL Area.
	0.5-1.0	EPH			0.5-1.0	Grain Size, TOC, pH EPH	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-05-C	0.0-0.5	EPH	Woodbridge Creek	SED-05-C	0.0-0.5	Metals and BNs	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect is adjacent to SWMU 31 (Effluent Treatment Plant) and SWMU 41 (Drying Area). In addition, this location is in line with the current discharge from the Effluent plant, as well as the location of the historic discharge point of SWMU 35 (No. 4 separator - Settling Basin in ISC Sewer Report). SWMU 1 (North Field Basin) and SWMU 2 (Surge Pond) also historically discharged at this point through Separator No.2 (API Separator #2 in ISC Sewer Report) and Separator No. 3. This location also addresses the Former SWMU 41 LNAPL area and the Former NF4 LNAPL Area.
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-06-A	0.0-0.5	EPH	Woodbridge Creek	SED-06-A	0.0-0.5	Metals and BNs	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect is adjacent to SWMU 1 (North Field Basin and SWMU 2 (Surge Pond). In addition, this location is in line with the historic confluence point of Spa Spring Creek and Woodbridge Creek and the overflow point of SWMU 1. This transect is also adjacent to the DITSWED-8 area.
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-06-B(R)	0.0-0.5	EPH	Woodbridge Creek	SED-06-B	0.0-0.5	Metals, BNs, pH, TOC, Grain Size	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect is adjacent to SWMU 1 (North Field Basin and SWMU 2 (Surge Pond). In addition, this location is in line with the historic confluence point of Spa Spring Creek and Woodbridge Creek and the overflow point of SWMU 1. This transect is also adjacent to the DITSWED-8 area.
	0.5-1.0	EPH			0.5-1.0	VOCs	
	4.0-4.5	EPH, BNs, Metals, VOCs			4.0-4.5	Grain Size, TOC, pH, EPH	
SED-06-C	0.0-0.5	EPH	Woodbridge Creek	SED-06-C	0.0-0.5	Metals, BNs, pH, TOC, Grain Size	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect is adjacent to SWMU 1 (North Field Basin and SWMU 2 (Surge Pond). In addition, this location is in line with the historic confluence point of Spa Spring Creek and Woodbridge Creek and the overflow point of SWMU 1. This transect is also adjacent to the DITSWED-8 area.
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					

Table 1 (Revised August 2019)
Proposed Sediment Sampling
Former Perth Amboy Chevron Facility
Perth Amboy, New Jersey

Proposed Sample Name	Sample Depth	Analysis	Location	Correlated Historic Samples	Historic Sample Depth	Historic Analysis	Explanation
SED-07-A	0.0-0.5	EPH	Spa Spring Creek	SED-07-A	0.0-0.5	Metals, BNs, pH, TOC, Grain Size	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect is upgradient of the new confluence of Spa Spring Creek and Woodbridge Creek. In addition, this transect is adjacent to SWMU 1 (North Field Basin).
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-07-B	0.0-0.5	EPH	Spa Spring Creek	SED-07-B	0.0-0.5	Metals, BNs, pH, TOC, Grain Size	
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-07-C	0.0-0.5	EPH	Spa Spring Creek	SED-07-C	0.0-0.5	Metals, BNs, pH, TOC, Grain Size	
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-08-A	0.0-0.5	EPH	Spa Spring Creek	SED-08-A	0.0-0.5	Metals, BNs, pH, TOC, Grain Size	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect was selected as it was adjacent to SWMU 27 (TEL Weathering Area), SWMU 29 (Fines Transfer Area), and SWMU 39 (Unnamed North Field Pond).
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-08-C	0.0-0.5	EPH	Spa Spring Creek	SED-08-C	0.0-0.5	Metals and BNs	
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-09-A(R)	0.0-0.5	EPH	Woodbridge Creek	SED-09-A and SED-09-A(R)	0.0-0.5	Metals and BNs	
	0.5-1.0	EPH			0.5-1.0	VOCs	
	3.0-3.5	EPH, BNs, Metals, VOCs			3.0-3.5	Grain Size, TOC, pH EPH	
SED-09-B	0.0-0.5	EPH	Woodbridge Creek	SED-09-B	0.0-0.5	Metals, BNs, pH, TOC, Grain Size	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). This transect is upgradient of the new confluence of Spa Spring Creek and Woodbridge Creek. This transect is also in line with the former American Cyanimid site and downstream of former discharge points from offsite properties along Woodbridge creek.
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-09-C(R)	0.0-0.5	EPH	Woodbridge Creek	SED-09-C and SED-09-C(R)	0.0-0.5	Metals and BNs	
	0.5-1.0	EPH			0.5-1.0	VOCs	
	2.75-3.25	EPH			2.75-3.25	Metals and BNs	
	4.5-5.0	BNs, Metals, VOCs			3.3-3.8	VOCs	
SED-10-A	0.0-0.5	EPH	Woodbridge Creek	SED-10-A	0.0-0.5	Metals and BNs	
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-10-B	0.0-0.5	EPH	Woodbridge Creek	SED-10-B	0.0-0.5	Metals and BNs	As requested in EPA's August 31, 2018 Letter, these sample locations will be revisited to analyze for additional parameters (EPH, TOC, pH and grain size). These samples were collected as background samples.
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-10-C	0.0-0.5	EPH	Woodbridge Creek	SED-10-C	0.0-0.5	Metals and BNs	
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					
SED-11-C	0.0-0.5	EPH	Woodbridge Creek	SED-11-C	0.0-0.5	Metals, BNs, pH, TOC, Grain Size	
	0.5-1.0	EPH			0.5-1.0	VOCs	
	TBD ¹	EPH, BNs, Metals, VOCs					

Table 1 (Revised August 2019)
Proposed Sediment Sampling
Former Perth Amboy Chevron Facility
Perth Amboy, New Jersey

Proposed Sample Name	Sample Depth	Analysis	Location	Correlated Historic Samples	Historic Sample Depth	Historic Analysis	Explanation
SED-19-B	0.0-0.5	EPH, BNs, and Metals	Woodbridge Creek	SED-19-B	4.0-4.5	VOCs, BNs and Metals	Samples were collected from the mouth of Woodbridge Creek. Sample locations are adjacent to both the Former Hess and Former Shell Sites and are situated next to Discharge 002 of the Former Hess Facility.
	0.5-1.0	EPH and VOCs			6.0-6.5	BNs, EPH, pH, Grain Size and TOC	
SED-19-C	0.0-0.5	EPH, BNs, and Metals	Woodbridge Creek	SED-19-C	7.5-8.0	VOCs, BNs, Metals, EPH, pH, Grain Size and TOC	
	0.5-1.0	EPH and VOCs				VOCs, BNs, Metals, EPH, pH, Grain Size and TOC	
SED-20-A	TBD ¹	BNs, Metals, and VOCs	Spa Spring Creek	SED-20-A	0.0-0.5	VOCs, BNs, Metals, EPH, pH, Grain Size and TOC	
SED-20-C	TBD ¹	BNs, Metals, and VOCs	Spa Spring Creek	SED-20-C	0.0-0.5	VOCs, BNs, Metals, EPH, pH, Grain Size and TOC	
SED-21-A	TBD ¹	BNs, Metals, and VOCs	Spa Spring Creek	SED-21-A	0.0-0.5	VOCs, BNs, Metals, EPH, pH, Grain Size and TOC	
SED-21-C	TBD ¹	BNs, Metals, and VOCs	Spa Spring Creek	SED-21-C	0.0-0.5	VOCs, BNs, Metals, EPH, pH, Grain Size and TOC	
SED-22-A	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek	No historic sample.			As requested in EPA's August 31, 2018 Letter, this transect will be located inbetween transects SED-01 and SED-02. This location is adjacent to the Former Hess and Former Shell Facilities and also coincides with the Hess Facilities Outfall 003.
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-22-B	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek	No historic sample.			
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-22-C	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek	No historic sample.			
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-23-A	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek	No historic sample.			As requested in EPA's August 31, 2018 Letter, this transect will be located inbetween transects SED-06 and SED-09. This location is adjacent to SWMU 1 (North Field Basin) and is in between SED-06 Transect and the confluence of Woodbridge Creek and Spa Spring Creek.
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-23-B	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek	No historic sample.			
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-23-C	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek	No historic sample.			
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					

Table 1 (Revised August 2019)
Proposed Sediment Sampling
Former Perth Amboy Chevron Facility
Perth Amboy, New Jersey

Proposed Sample Name	Sample Depth	Analysis	Location	Correlated Historic Samples	Historic Sample Depth	Historic Analysis	Explanation
SED-24-A	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek	No historic sample.			As requested in EPA's August 31, 2018 Letter, this transect will be located in between transects SED-06 and SED-09. This location is upstream of the Site and also upstream of the confluence of Woodbridge Creek and Spa Spring Creek.
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-24-B	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek	No historic sample.			
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-24-C	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek	No historic sample.			
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-25-A ³	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek	No historic sample.			
	0.5-1.0	VOCs					
SED-25-B ³	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek	No historic sample.			As requested in EPA's August 31, 2018 Letter, this transect will be located inbetween transects SED-02 and SED-03. This location is adjacent to the former Motiva/Shell Facilities, where a large petroleum spill occurred in the 1990s. In addition, this transect is directly adjacent to the Former AOC 8 (Oily Tarry Material at B27 and B23) NF6 LNAPL Area and downgradient of the SWMU 40 (Old Pond) LNAPL Area.
	0.5-1.0	VOCs					
SED-25-C ³	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Woodbridge Creek	No historic sample.			
	0.5-1.0	VOCs					
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-SSBG-1	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Spa Spring Creek	No historic sample.			Background Sample
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-SSBG-2	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Spa Spring Creek	No historic sample.			Background Sample
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-SSBG-3	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Spa Spring Creek	No historic sample.			Background Sample
	TBD ¹	EPH, VOCs, SVOCs, Metals					
SED-SSBG-4	0.0-0.5	EPH, SVOCs, Metals, TOC, pH and grain size	Spa Spring Creek	No historic sample.			Background Sample
	TBD ¹	EPH, VOCs, SVOCs, Metals					

¹ - TBD indicates the 6-inch sample interval To Be Determined based on field detectable evidence of contamination, or if no evidence, from 2-2.5 feet below the sediment surface or from 0.5-foot interval above parent material, whichever is first encountered.

² - Samples will be collected in the vicinity of the SED-10 transect, exact locations will be determined in the field.

³ - Pending utility approval, TRC will collect a shallow sediment sample using a Ponar Sampler.

ATTACHMENT 3:

ANALYTICAL DATA SUMMARY SHEETS:

**1 - TABLE 9-8 OF THE 2003 BASLINE ECOLOGICAL EVALUATION
SHOWING SEMI-VOLATILE ORGANIC COMPOUND
CONCENTRATIONS IN SEDIMENT**

**2 – REVISED TABLE IV OF THE 2016 SUPPLEMENTAL ECOLOGICAL
EVALUATION REPORT**

Revised Table 9-8 (August 2019)
Semi-Volatile Organic Compounds in Sediment Samples
Chevron Perth Amboy, New Jersey

TRC Sample No./Depth Sampled (in): SED-11-C/0-6	SED-08-A/0-6	SED-08-C/0-6	SED-07-A/0-6	SED-07-B/0-6	SED-07-C/0-6	SED-10-A/0-6	SED-10-B/0-6	SED-10-C/0-6
Date Sampled: 12/20/02	12/20/02	12/20/02	12/20/02	12/20/02	12/20/02	12/19/02	12/19/02	12/19/02
Lab Sample No.: 3967899	3967903	3967885	3967897	3967859	3967901	3967871	3967873	3967862
Laboratory: Lancaster	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster

SVOCs (ppm)	Abbrev.	ER-L ⁽¹⁾	ER-M ⁽¹⁾	Flow Direction	Spa Spring Creek				Woodbridge Creek				
					↔	↔	↔	↔	↔	↔	↔	↔	
Naphthalene	Naphthalene	0.16	2.1	0.012	U	0.013	J	0.024	U	0.053	0.034	U	0.031
2-Methylnaphthalene	2-MNap	0.07	0.67	0.0049	U	0.0071	J	0.015	J	0.057	0.014	U	0.013
Acenaphthylene	ACPL	0.044	0.64	0.0049	U	0.0024	U	0.015	J	0.083	0.014	U	0.013
Acenaphthene	ACP	0.016	0.5	0.0049	U	0.005	J	0.011	J	0.017	J	0.014	U
Fluorene	Fluorene	0.019	0.54	0.0059	J	0.0062	J	0.016	J	0.031	0.014	U	0.013
Phenanthrene	PhA	0.24	1.5	0.011	J	0.032		0.17		0.31	0.018	J	0.025
Anthracene	ANT	0.085	1.1	0.0049	U	0.0071	J	0.043		0.13	0.014	U	0.013
Fluoranthene	Fluoranthene	0.6	5.1	0.022		0.056		0.39		0.5	0.034	J	0.028
Pyrene	Pyrene	0.665	2.6	0.022		0.1		0.35		0.61	0.039	J	0.031
Benzo(a)anthracene	B(a)A	0.261	1.6	0.0097	J	0.018		0.16		0.29	0.014	U	0.013
Chrysene	Chrysene	0.384	2.8	0.011	J	0.036		0.24		0.39	0.02	J	0.017
Benzo(b)fluoranthene	B(b)F	(--)	(--)	0.012	J	0.042		0.33		0.53	0.025	J	0.02
Benzo(k)fluoranthene	B(k)F	0.24	1340	0.0049	U	0.015	J	0.12		0.18	0.014	U	0.013
Benzo(a)pyrene	B(a)P	0.43	1.6	0.0061	J	0.018		0.22		0.45	0.014	J	0.013
Indeno(1,2,3-cd)pyrene	I(1,2,3-cd)P	0.2	320	0.0058	J	0.019		0.18		0.37	0.014	U	0.014
Dibenz(a,h)anthracene	DB(a,h)a	0.063	0.26	0.0049	U	0.0067	J	0.05		0.15	0.014	U	0.013
Benzo(g,h,i)perylene	B(g,h,i)P	0.17	320	0.0049	U	0.025		0.23		0.74	0.016	J	0.095
Phenol	Phenol	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
2-Chlorophenol	2-CP	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
N-Nitroso-di-n-propylamine	NDPA	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
4-Chloro-3-methylphenol	4-C-3-MP	(--)	(--)	0.32	U	1.6	U	0.62	U	0.2	U	1.4	U
2-Nitrophenol	2-NP	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
2,4-Dimethylphenol	2,4-DMP	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
2,4-Dichlorophenol	2,4-DCP	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
2,4,6-Trichlorophenol	2,4,6-TCP	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
bis(2-Chloroethyl)ether	b(2-c)E	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
Hexachloroethane	HCE	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
Nitrobenzene	Nitrobenzene	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
Isophorone	IP	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.21	U
bis(2-Chloroethoxy)methane	b(2-c)M	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
Hexachlorobutadiene	HCBD	(--)	(--)	0.32	U	1.6	U	0.62	U	0.2	U	1.4	U
Hexachlorocyclopentadiene	HCCPD	(--)	(--)	0.81	U	4	U	1.6	U	0.5	U	3.4	U
2-Chloronaphthalene	2-CNP	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
Dimethylphthalate	DMP	(--)	(--)	0.32	U	1.6	U	0.62	U	0.2	U	1.4	U
2-Methylphenol	2-MP	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
2,2'-oxybis(1-Chloropropane)	2,2-OB-1-CP	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
4-Methylphenol	4-MP	(--)	(--)	0.32	U	1.6	U	0.62	U	0.2	U	1.4	U
4-Chloroaniline	4-CLA	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
2,4,5-Trichlorophenol	2,4,5-TCP	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
2-Nitroaniline	2-NA	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
Atrazine	Atrazine	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
Caprolactam	Caprolactam	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
Benzaldehyde	Benzald	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
4-Nitrophenol	4-NP	(--)	(--)	0.81	U	4	U	1.6	U	0.5	U	3.4	U
2,4-Dinitrotoluene	2,4-DNT	(--)	(--)	0.32	U	1.6	U	0.62	U	0.2	U	1.4	U
Pentachlorophenol	PCP	(--)	(--)	0.81	U	4	U	1.6	U	0.5	U	3.4	U
2,4-Dinitrophenol	2,4-DNP	(--)	(--)	3.2	U	16	U	6.2	U	2	U	14	U
4,6-Dinitro-2-methylphenol	4,6-DN-2-MP	(--)	(--)	0.81	U	4	U	1.6	U	0.5	U	3.4	U
2,6-Dinitrotoluene	2,6-DNT	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U
4-Chlorophenyl-phenylether	4-CPPE	(--)	(--)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U

U = The compound was not detected at the indicated concentration.

J = Estimated value; ND = not detected.

⁽¹⁾ New Jersey Sediment Screening Guidelines represent Effects Range-Low (ER-L) and Effects Range-Medium (ER-M)

in Table 2 of NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

(--) = New Jersey Sediment Screening Guideline not listed in NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

Bold indicates concentration above the ER-L; bold and shaded indicates concentration above the ER-M.

ppm = parts per million.

Revised Table 9-8 (August 2019)
Semi-Volatile Organic Compounds in Sediment Samples
Chevron Perth Amboy, New Jersey

TRC Sample No./Depth Sampled (in): SED-11-C/0-6 SED-08-A/0-6 SED-08-C/0-6 SED-07-A/0-6 SED-07-B/0-6 SED-07-C/0-6 SED-10-A/0-6 SED-10-B/0-6 SED-10-C/0-6
 Date Sampled: 12/20/02 12/20/02 12/20/02 12/20/02 12/20/02 12/20/02 12/19/02 12/19/02 12/19/02
 Lab Sample No.: 3967899 3967903 3967885 3967897 3967859 3967901 3967871 3967873 3967862
 Laboratory: Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster

SVOCs (cont'd) (ppm)	Abbrev.	ER-L ⁽¹⁾	ER-M ⁽¹⁾	Flow Direction	Spa Spring Creek				Woodbridge Creek												
					↔	↔	↔	↔	↔	↔	↔	↔									
Diethylphthalate	DEP	(-)	(-)	0.32	U	1.6	U	0.62	U	0.2	U	1.4	U	0.42	U	0.082	U	0.34	U	0.082	U
N-Nitrosodiphenylamine	NDPhA	(-)	(-)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U	0.21	U	0.062	J	0.17	U	0.04	U
4-Bromophenyl-phenylether	4-BPPE	(-)	(-)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U	0.21	U	0.04	U	0.17	U	0.04	U
Hexachlorobenzene	HCB	0.02	24	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U	0.21	U	0.04	U	0.17	U	0.04	U
Di-n-butylphthalate	DBP	(-)	(-)	0.32	U	1.6	U	0.62	U	0.2	U	1.4	U	0.42	U	0.082	U	0.34	U	0.082	U
Butylbenzylphthalate	BBP	(-)	(-)	0.32	U	1.6	U	0.62	U	0.2	U	1.4	U	0.42	U	0.082	U	0.34	U	0.082	U
3,3'-Dichlorobenzidine	3,3'-DCBd	(-)	(-)	0.32	U	1.6	U	0.62	U	0.2	U	1.4	U	0.42	U	0.082	U	0.34	U	0.082	U
bis(2-Ethylhexyl)phthalate	B(2-EH)P	(-)	(-)	0.32	U	1.6	U	0.86	J	0.5	J	1.4	U	0.42	U	0.46	1	J	5.2		
Di-n-octylphthalate	DOP	(-)	(-)	0.32	U	1.6	U	0.62	U	0.2	U	1.4	U	0.42	U	0.082	U	0.34	U	0.082	U
3-Nitroaniline	3-NA	(-)	(-)	0.32	U	1.6	U	0.62	U	0.2	U	1.4	U	0.42	U	0.082	U	0.34	U	0.082	U
Dibenzofuran	DBF	(-)	(-)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U	0.21	U	0.04	U	0.61	J	0.04	U
4-Nitroaniline	4-NA	(-)	(-)	0.32	U	1.6	U	0.62	U	0.2	U	1.4	U	0.42	U	0.082	U	0.34	U	0.082	U
Carbazole	Carbazole	(-)	(-)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U	0.21	U	0.04	U	0.88	J	0.04	U
1,1'-Biphenyl	1,1-BP	(-)	(-)	0.17	U	0.81	U	0.32	U	0.098	U	0.68	U	0.21	U	0.04	U	0.17	U	0.04	U
Acetophenone	Acetophen	(-)	(-)	0.32	U	1.6	U	0.62	U	0.2	U	1.4	U	0.42	U	0.082	U	0.34	U	0.082	U
Total Targeted SVOCs		(-)	(-)	0.1055		0.4061		3.4		5.391		0.166		0.135		1.9187		10.766		7.854	
Total TICs		(-)	(-)	119.8		1155.2		134.3		107.2		494.3		154.7		17.84		52		20.67	
Total PAHs		4	45	0.1055		0.4061		2.54		4.891		0.166		0.135		1.3967		8.276		2.654	
Total SVOCs		(-)	(-)	119.9055		1155.6061		137.7		112.591		494.466		154.835		19.7587		62.766		28.524	

U = The compound was not detected at the indicated concentration.

J = Estimated value; ND = not detected.

⁽¹⁾ New Jersey Sediment Screening Guidelines represent Effects Range-Low (ER-L) and Effects Range-Medium (ER-M)

in Table 2 of NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

(-) = New Jersey Sediment Screening Guideline not listed in NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

Bold indicates concentration above the ER-L; bold and shaded indicates concentration above the ER-M.

ppm = parts per million.

Revised Table 9-8 (August 2019)
Semi-Volatile Organic Compounds in Sediment Samples
Chevron Perth Amboy, New Jersey

TRC Sample No./Depth Sampled (in): SED-09-A/0-6	SED-09-B/0-6	SED-09-C/0-6	SED-09-C/33-39
Date Sampled: 12/19/02	12/19/02	12/19/02	12/19/02
Lab Sample No.: 3967877	3967869	3967864	3967865
Laboratory: Lancaster	Lancaster	Lancaster	Lancaster

SVOCs (ppm)	Abbrev.	ER-L ⁽¹⁾	ER-M ⁽¹⁾	Woodbridge Creek															
				⇒			⇒			⇒			⇒						
Naphthalene	Naphthalene	0.16	2.1	0.024	J	0.068	0.049	5.9	0.01	U	0.012	J	0.029	J	0.092	J	0.0062	U	
2-Methylnaphthalene	2-MNap	0.07	0.67	0.017		0.067	0.032	21	0.004	U	0.011		0.024	J	0.049	J	0.0059	J	
Acenaphthylene	ACPL	0.044	0.64	0.053		0.052	0.083	0.97	0.008	J	0.019		0.05		0.088		0.0071	J	
Acenaphthene	ACP	0.016	0.5	0.032		0.2	0.099	1.9	0.004	U	0.0052	J	0.056		0.045	J	0.0025	U	
Fluorene	Fluorene	0.019	0.54	0.028		0.22	0.085	3.8	0.0061	J	0.0064	J	0.059		0.072		0.003	J	
Phenanthrene	PhA	0.24	1.5	0.11		2	0.95	18	0.018		0.038		0.72		0.7		0.025		
Anthracene	ANT	0.085	1.1	0.29		0.67	0.31	3.1	0.011	J	0.033		0.2		0.19		0.011		
Fluoranthene	Fluoranthene	0.6	5.1	0.71		2.3	2.1	5.5	0.041		0.13		1.2		1.1		0.076		
Pyrene	Pyrene	0.665	2.6	1.9		4.6	2.9	13	0.11		0.71		1.7		2.3		0.2		
Benzo(a)anthracene	B(a)A	0.261	1.6	0.69		1.9	1.2	6.5	0.034		0.15		0.8		0.83		0.066		
Chrysene	Chrysene	0.384	2.8	1.1		2.1	1.7	11	0.052		0.27		1.1		1.1		0.083		
Benzo(b)fluoranthene	B(b)F	(-)	(-)	0.68		2.1	2.3	9.6	0.071		0.28		1.4		1.2		0.19		
Benzo(k)fluoranthene	B(k)F	0.24	1340	0.21		0.95	0.71	1.2	0.022		0.077		0.46		0.43		0.044		
Benzo(a)pyrene	B(a)P	0.43	1.6	0.55		1.7	1.5	13	0.044		0.21		0.94		1.3		0.2		
Indeno(1,2,3-cd)pyrene	I(1,2,3-cd)P	0.2	320	0.17		0.99	0.8	4.1	0.028		0.07		0.44		0.64		0.1		
Dibenz(a,h)anthracene	DB(a,h)a	0.063	0.26	0.07		0.28	0.23	4	0.011	J	0.031		0.14		0.28		0.064		
Benzo(g,h,i)perylene	B(g,h,i)P	0.17	320	0.24		1	1	18	0.049		0.1		0.54		1.2		0.27		
Phenol	Phenol	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
2-Chlorophenol	2-CP	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
N-Nitroso-di-n-propylamine	NDPA	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
4-Chloro-3-methylphenol	4-C-3-MP	(--)	(--)	0.27	U	0.17	U	0.7	U	1.5	U	0.34	U	0.17	U	0.56	U	0.083	U
2-Nitrophenol	2-NP	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
2,4-Dimethylphenol	2,4-DMP	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
2,4-Dichlorophenol	2,4-DCP	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
2,4,6-Trichlorophenol	2,4,6-TCP	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
bis(2-Chloroethyl)ether	b(2-c)E	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
Hexachloroethane	HCE	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
Nitrobenzene	Nitrobenzene	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
Isophorone	IP	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
bis(2-Chloroethoxy)methane	b(2-c)M	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
Hexachlorobutadiene	HCBD	(--)	(--)	0.27	U	0.17	U	0.7	U	1.5	U	0.34	U	0.17	U	0.56	U	0.46	U
Hexachlorocyclopentadiene	HCCPD	(--)	(--)	0.69	U	0.44	U	1.7	U	3.7	U	0.85	U	0.43	U	1.4	U	1.2	U
2-Chloronaphthalene	2-CNP	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
Dimethylphthalate	DMP	(--)	(--)	0.27	U	0.17	U	0.7	U	1.5	U	0.34	U	0.17	U	0.56	U	0.46	U
2-Methylphenol	2-MP	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
2,2'-oxybis(1-Chloropropane)	2,2-OB-1-CP	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
4-Methylphenol	4-MP	(--)	(--)	0.27	U	0.17	U	0.7	U	1.5	U	0.34	U	0.17	U	0.56	U	0.46	U
4-Chloroaniline	4-CLA	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
2,4,5-Trichlorophenol	2,4,5-TCP	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
2-Nitroaniline	2-NA	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
Atrazine	Atrazine	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
Caprolactam	Caprolactam	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
Benzaldehyde	Benzald	(--)	(--)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
4-Nitrophenol	4-NP	(--)	(--)	0.69	U	0.44	U	2	U	3.7	U	0.85	U	0.43	U	1.4	U	1.2	U
2,4-Dinitrotoluene	2,4-DNT	(--)	(--)	0.27	U	0.17	U	0.7	U	1.5	U	0.34	U	0.17	U	0.56	U	0.46	U
Pentachlorophenol	PCP	(--)	(--)	0.69	U	0.44	U	2	U	3.7	U	0.85	U	0.43	U	1.4	U	1.2	U
2,4-Dinitrophenol	2,4-DNP	(--)	(--)	2.7	U	1.7	U	7	U	15	U	3.4	U	1.7	U	5.6	U	4.6	U
4,6-Dinitro-2-methylphenol	4,6-DN-2-MP	(--)	(--)	0.69	U	0.44	U	2	U	3.7	U	0.85	U	0.43	U	1.4	U	1.2	U
2,6-Dinitrotoluene	2,6-DNT	(--)	(--)	0.14	U	0.09	U	0.3	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U
4-Chlorophenyl-phenylether	4-CPPE	(--)	(--)	0.14	U	0.09	U	0.3	U	0.73	U	0.17	U	0.086	U	0.29	U	0.041	U

U = The compound was not detected at the indicated concentration.

J = Estimated value; ND = not detected.

⁽¹⁾ New Jersey Sediment Screening Guidelines represent Effects Range-Low (ER-L) and Effects Range-Medium (ER-M)

in Table 2 of NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

(--) = New Jersey Sediment Screening Guideline not listed in NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

Bold indicates concentration above the ER-L; bold and shaded indicates concentration above the ER-M.

ppm = parts per million.

Revised Table 9-8 (August 2019)
Semi-Volatile Organic Compounds in Sediment Samples
Chevron Perth Amboy, New Jersey

TRC Sample No./Depth Sampled (in): SED-09-A/0-6	SED-09-B/0-6	SED-09-C/0-6	SED-09-C/33-39
Date Sampled: 12/19/02	12/19/02	12/19/02	12/19/02
Lab Sample No.: 3967877	3967869	3967864	3967865
Laboratory: Lancaster	Lancaster	Lancaster	Lancaster

SVOCs (cont'd) (ppm)	Abbrev.	ER-L ⁽¹⁾	ER-M ⁽¹⁾	Woodbridge Creek								↔	↔	↔	↔						
Diethylphthalate	DEP	(-)	(-)	0.27	U	0.17	U	0.7	U	1.5	U	0.34	U	0.17	U	0.56	U	0.46	U	0.083	U
N-Nitrosodiphenylamine	NDPhA	(-)	(-)	0.14	U	0.09	U	0.3	U	0.73	U	0.17	U	0.086	U	0.29	U	0.24	U	0.041	U
4-Bromophenyl-phenylether	4-BPPE	(-)	(-)	0.14	U	0.09	U	0.3	U	0.73	U	0.17	U	0.086	U	0.29	U	0.24	U	0.041	U
Hexachlorobenzene	HCB	0.02	24	0.14	U	0.09	U	0.3	U	0.73	U	0.17	U	0.086	U	0.29	U	0.24	U	0.041	U
Di-n-butylphthalate	DBP	(-)	(-)	0.27	U	0.17	U	0.7	U	1.5	U	0.34	U	0.17	U	0.56	U	0.46	U	0.083	U
Butylbenzylphthalate	BBP	(-)	(-)	0.27	U	0.17	U	0.7	U	1.5	U	0.34	U	0.17	U	0.56	U	0.46	U	0.083	U
3,3'-Dichlorobenzidine	3,3'-DCBd	(-)	(-)	0.27	U	0.17	U	0.7	U	1.5	U	0.34	U	0.17	U	0.56	U	0.46	U	0.083	U
bis(2-Ethylhexyl)phthalate	B(2-EH)P	(-)	(-)	4.2		1.4		7		37		0.69	J	0.71	J	3.1		2.1	J	0.51	
Di-n-octylphthalate	DOP	(-)	(-)	0.27	U	0.17	U	0.7	U	1.5	U	0.34	U	0.17	U	0.56	U	0.46	U	0.083	U
3-Nitroaniline	3-NA	(-)	(-)	0.27	U	0.17	U	0.7	U	1.5	U	0.34	U	0.17	U	0.56	U	0.46	U	0.083	U
Dibenzofuran	DBF	(-)	(-)	0.14	U	0.09	U	0.3	U	1.9	J	0.17	U	0.086	U	0.29	U	0.24	U	0.041	U
4-Nitroaniline	4-NA	(-)	(-)	0.27	U	0.17	U	0.7	U	1.5	U	0.34	U	0.17	U	0.56	U	0.46	U	0.083	U
Carbazole	Carbazole	(-)	(-)	0.14	U	0.09	U	0.3	U	0.73	U	0.17	U	0.086	U	0.29	U	0.24	U	0.041	U
1,1'-Biphenyl	1,1-BP	(-)	(-)	0.14	U	0.09	U	0.34	U	0.73	U	0.17	U	0.086	U	0.29	U	0.24	U	0.041	U
Acetophenone	Acetophen	(-)	(-)	0.27	U	0.17	U	0.7	U	1.5	U	0.34	U	0.17	U	0.56	U	0.46	U	0.083	U
Total Targeted SVOCs		(-)	(-)	11.074		22.597		23.048		179.47		1.1951		2.8626		12.958		13.716		1.855	
Total TICs		(-)	(-)	66.3		29.2		190.3		1181		123.89		29.38		65.5		75.6		25.49	
Total PAHs		4	45	6.874		21.197		16.048		140.57		0.5051		2.1526		9.858		11.616		1.345	
Total SVOCs		(-)	(-)	77.374		51.797		213.348		1360.47		125.0851		32.2426		78.458		89.316		27.345	

U = The compound was not detected at the indicated concentration.

J = Estimated value; ND = not detected.

⁽¹⁾ New Jersey Sediment Screening Guidelines represent Effects Range-Low (ER-L) and Effects Range-Medium (ER-M)

in Table 2 of NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

(-) = New Jersey Sediment Screening Guideline not listed in NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

Bold indicates concentration above the ER-L; bold and shaded indicates concentration above the ER-M.

ppm = parts per million.

Revised Table 9-8 (August 2019)
Semi-Volatile Organic Compounds in Sediment Samples
Chevron Perth Amboy, New Jersey

TRC Sample No./Depth Sampled (in): SED-05-C/0-6	SED-04-A/0-6	SED-04-A/39-45	SED-04-B/0-6
Date Sampled: 12/19/02	12/19/02	12/19/02	12/19/02
Lab Sample No.: 3967915	3967912	3967915	3967917
Laboratory: Lancaster	Lancaster	Lancaster	Lancaster

SVOCs (ppm)	Abbrev.	ER-L ⁽¹⁾	ER-M ⁽¹⁾	Woodbridge Creek															
Naphthalene	Naphthalene	0.16	2.1	0.13	0.04	U	0.42	0.036	0.0041	J	0.065	J	0.086	J	3.4		10		
2-Methylnaphthalene	2-MNap	0.07	0.67	0.13	0.027	J	1.4	0.031	0.0034	J	0.042	J	0.093	J	7.5		39		
Acenaphthylene	ACPL	0.044	0.64	0.11	0.063	J	0.29	0.025	0.0012	J	0.15		0.13		0.8		1.2		
Acenaphthene	ACP	0.016	0.5	0.068	0.036	J	0.64	0.092	0.0015	J	0.086	J	0.26		1.9		2.8		
Fluorene	Fluorene	0.019	0.54	0.065	0.052	J	1.1	0.092	0.003	J	0.019	U	0.25		3.7		5.8		
Phenanthrene	PhA	0.24	1.5	0.17	0.6		4.5	1	0.011		0.25		2.5		11		10		
Anthracene	ANT	0.085	1.1	0.18	0.2		0.97	0.28	0.003	J	0.36		0.95		1.9		1.4		
Fluoranthene	Fluoranthene	0.6	5.1	1.1	1.2		2.5	1.1	0.021		2		4.8		4.2		3.7		
Pyrene	Pyrene	0.665	2.6	1.4	1.8		6.1	1.4	0.027		5.2		6		8.6		5.1		
Benzo(a)anthracene	B(a)A	0.261	1.6	0.54	0.72		2	0.51	0.0081		1.3		2.9		3.9		1.4		
Chrysene	Chrysene	0.384	2.8	0.96	1		2.8	0.68	0.011		2.3		3.6		7.5		2.5		
Benzo(b)fluoranthene	B(b)F	(-)	(-)	0.98	1.3		1.6	0.69	0.017		1.6		3.8		5.9		1.4		
Benzo(k)fluoranthene	B(k)F	0.24	1340	0.32	0.44		0.46	0.24	0.0056		0.44		1.3		1.1		0.46		
Benzo(a)pyrene	B(a)P	0.43	1.6	0.71	1.1		2	0.6	0.01		1.1		3.3		8.5		1.1		
Indeno(1,2,3-cd)pyrene	I(1,2,3-cd)P	0.2	320	0.54	0.76		0.86	0.41	0.0076		0.72		1.9		3.6		0.69		
Dibenz(a,h)anthracene	DB(a,h)a	0.063	0.26	0.17	0.2		0.48	0.11	0.0018	J	0.35		0.59		3.1		0.22		
Benzo(g,h,i)perylene	B(g,h,i)P	0.17	320	0.68	1		2.4	0.5	0.011		1.6		2.1		14		0.94		
Phenol	Phenol	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
2-Chlorophenol	2-CP	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
N-Nitroso-di-n-propylamine	NDPA	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
4-Chloro-3-methylphenol	4-C-3-MP	(--)	(--)	2.6	U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U
2-Nitrophenol	2-NP	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
2,4-Dimethylphenol	2,4-DMP	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
2,4-Dichlorophenol	2,4-DCP	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
2,4,6-Trichlorophenol	2,4,6-TCP	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
bis(2-Chloroethyl)ether	b(2-c)E	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
Hexachloroethane	HCE	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
Nitrobenzene	Nitrobenzene	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
Isophorone	IP	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
bis(2-Chloroethoxy)methane	b(2-c)M	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
Hexachlorobutadiene	HCBD	(--)	(--)	2.6	U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U
Hexachlorocyclopentadiene	HCCPD	(--)	(--)	6.5	U	0.27	U	2.8	U	0.22	U	0.4	U	2	U	0.62	U	4.1	U
2-Chloronaphthalene	2-CNP	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
Dimethylphthalate	DMP	(--)	(--)	2.6	U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U
2-Methylphenol	2-MP	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
2,2'-oxybis(1-Chloropropane)	2,2-OB-1-CP	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
4-Methylphenol	4-MP	(--)	(--)	2.6	U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U
4-Chloroaniline	4-CLA	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
2,4,5-Trichlorophenol	2,4,5-TCP	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
2-Nitroaniline	2-NA	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
Atrazine	Atrazine	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
Caprolactam	Caprolactam	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
Benzaldehyde	Benzald	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
4-Nitrophenol	4-NP	(--)	(--)	6.5	U	0.27	U	2.8	U	0.22	U	0.4	U	2	U	0.62	U	4.1	U
2,4-Dinitrotoluene	2,4-DNT	(--)	(--)	2.6	U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U
Pentachlorophenol	PCP	(--)	(--)	6.5	U	0.27	U	2.8	U	0.22	U	0.4	U	2	U	0.62	U	4.1	U
2,4-Dinitrophenol	2,4-DNP	(--)	(--)	26	U	1.1	U	11	U	0.85	U	1.6	U	7.8	U	2.4	U	16	U
4,6-Dinitro-2-methylphenol	4,6-DN-2-MP	(--)	(--)	6.5	U	0.27	U	2.8	U	0.22	U	0.4	U	2	U	0.62	U	4.1	U
2,6-Dinitrotoluene	2,6-DNT	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U
4-Chlorophenyl-phenylether	4-CPPE	(--)	(--)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U

U = The compound was not detected at the indicated concentration.

J = Estimated value; ND = not detected.

⁽¹⁾ New Jersey Sediment Screening Guidelines represent Effects Range-Low (ER-L) and Effects Range-Medium (ER-M)

in Table 2 of NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

(--) = New Jersey Sediment Screening Guideline not listed in NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

Bold indicates concentration above the ER-L; bold and shaded indicates concentration above the ER-M.

ppm = parts per million.

Revised Table 9-8 (August 2019)
Semi-Volatile Organic Compounds in Sediment Samples
Chevron Perth Amboy, New Jersey

TRC Sample No./Depth Sampled (in): SED-05-C/0-6 SED-04-A/0-6 SED-04-A/39-45 SED-04-B/0-6 SED-04-C/0-6 SED-03-A/0-6 SED-03-B/0-6 SED-03-C/0-6 SED-03-C/12-18
 Date Sampled: 12/19/02 12/19/02 12/19/02 12/19/02 12/19/02 12/19/02 12/19/02 12/19/02
 Lab Sample No.: 3967855 3967911 3967912 3967915 3967917 3967919 3967857 3967921
 Laboratory: Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster

SVOCs (cont'd) (ppm)	Abbrev.	ER-L ⁽¹⁾	ER-M ⁽¹⁾	Woodbridge Creek								⇒				⇒				⇒			
				U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U	1.6	U	1.6	U	1.6
Diethylphthalate	DEP	(-)	(-)	2.6	U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U	1.6	U	1.6	U
N-Nitrosodiphenylamine	NDPhA	(-)	(-)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U	0.81	U	0.81	U
4-Bromophenyl-phenylether	4-BPPE	(-)	(-)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U	0.81	U	0.81	U
Hexachlorobenzene	HCB	0.02	24	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U	0.81	U	0.81	U
Di-n-butylphthalate	DBP	(-)	(-)	2.6	U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U	1.6	U	1.6	U
Butylbenzylphthalate	BBP	(-)	(-)	2.6	U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U	1.6	U	1.6	U
3,3'-Dichlorobenzidine	3,3'-DCBd	(-)	(-)	2.6	U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U	1.6	U	1.6	U
bis(2-Ethylhexyl)phthalate	B(2-EH)P	(-)	(-)	18		2.3		5.2	J	0.85		0.17	J	50		1.7		12		8	J		
Di-n-octylphthalate	DOP	(-)	(-)	2.6	U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U	1.6	U	1.6	U
3-Nitroaniline	3-NA	(-)	(-)	2.6	U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U	1.6	U	1.6	U
Dibenzofuran	DBF	(-)	(-)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	1.9	J	3.9	J		
4-Nitroaniline	4-NA	(-)	(-)	2.6	U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U	1.6	U	1.6	U
Carbazole	Carbazole	(-)	(-)	1.3	U	0.087	J	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U	0.81	U		
1,1'-Biphenyl	1,1-BP	(-)	(-)	1.3	U	0.053	U	0.53	U	0.042	U	0.078	U	0.4	U	0.13	U	0.8	U	0.81	U		
Acetophenone	Acetophen	(-)	(-)	2.6	U	0.11	U	1.1	U	0.085	U	0.16	U	0.78	U	0.24	U	1.6	U	1.6	U	1.6	U
Total Targeted SVOCs		(-)	(-)	26.253		12.885		35.72		8.646		0.3173		67.563		36.259		104.5		99.61			
Total TICs		(-)	(-)	184.2		52.5		586		33.14		56.17		485		67.6		1403		2204			
Total PAHs		4	45	8.253		10.498		30.52		7.796		0.1473		17.563		34.559		90.6		87.71			
Total SVOCs		(-)	(-)	210.453		65.385		621.72		41.786		56.4873		552.563		103.859		1507.5		2303.61			

U = The compound was not detected at the indicated concentration.

J = Estimated value; ND = not detected.

(¹) New Jersey Sediment Screening Guidelines represent Effects Range-Low (ER-L) and Effects Range-Medium (ER-M)

in Table 2 of NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

(-) = New Jersey Sediment Screening Guideline not listed in NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

Bold indicates concentration above the ER-L; bold and shaded indicates concentration above the ER-M.

ppm = parts per million.

Revised Table 9-8 (August 2019)
Semi-Volatile Organic Compounds in Sediment Samples
Chevron Perth Amboy, New Jersey

TRC Sample No./Depth Sampled (in): SED-03-C/30-36 SED-02-A/0-6 SED-02-B/0-6 SED-02-B/0-6D SED-02-C/0-6 SED-01-A/0-6 SED-01-B/0-6 SED-01-C/0-6 SED-16-C/0-6
 Date Sampled: 12/19/02 12/20/02 12/20/02 12/20/02 12/20/02 12/20/02 12/20/02 12/17/02
 Lab Sample No.: 3967923 3967892 3967889 3967890 3967894 3967881 3967883 3967905
 Laboratory: Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster

SVOCs (ppm)	Abbrev.	ER-L ⁽¹⁾	ER-M ⁽¹⁾	Woodbridge Creek								Arthur Kill									
				⇒		⇒		⇒		⇒											
Naphthalene	Naphthalene	0.16	2.1	3.4	0.1	J	0.19	0.036	U	0.071	J	0.039	0.042	0.089	0.11						
2-Methylnaphthalene	2-MNap	0.07	0.67	8.9	0.069	J	0.15	0.032	J	0.056	J	0.029	0.039	0.05	0.065						
Acenaphthylene	ACPL	0.044	0.64	0.33	0.11		0.046	J	0.057	J	0.11		0.062	0.059	0.17	0.15					
Acenaphthene	ACP	0.016	0.5	0.46	0.034	J	0.45		0.068		0.037	J	0.012	J	0.077	0.084	0.027				
Fluorene	Fluorene	0.019	0.54	0.99	0.049	J	0.5		0.14		0.037	J	0.022		0.069	0.1	0.05				
Phenanthrene	PhA	0.24	1.5	2.8	0.33		4.9	1.7		0.2		0.13	0.61		0.29	0.2					
Anthracene	ANT	0.085	1.1	0.32	0.24		1.3	0.47		0.22		0.086	0.2		0.5	0.25					
Fluoranthene	Fluoranthene	0.6	5.1	1	1.3		4.8	2.2		0.94		0.64	1		1.3	1					
Pyrene	Pyrene	0.665	2.6	1.8	1.6		5.1	2.3		3.3		0.72	1.3		2.6	1.3					
Benzo(a)anthracene	B(a)A	0.261	1.6	0.4	0.55		2.1		1		0.65		0.31	0.61		0.59	0.44				
Chrysene	Chrysene	0.384	2.8	0.53	0.83		2.3		1.4		1.4		0.23	0.91		1.2	0.7				
Benzo(b)fluoranthene	B(b)F	(-)	(-)	0.39	1.2		2.6	1.3		1.5		0.55	1		0.7	0.9					
Benzo(k)fluoranthene	B(k)F	0.24	1340	0.11	0.4		0.99	0.48		0.48		0.2	0.36		0.19	0.33					
Benzo(a)pyrene	B(a)P	0.43	1.6	0.29	0.78		2.2		0.97		1.4		0.39	0.86		0.42	0.65				
Indeno(1,2,3-cd)pyrene	I(1,2,3-cd)P	0.2	320	0.16	0.58		1.4		0.55		0.75		0.36	0.64		0.16	0.36				
Dibenz(a,h)anthracene	DB(a,h)a	0.063	0.26	0.058	J	0.17		0.34		0.17		0.37		0.096	0.21		0.059	0.094			
Benzo(g,h,i)perylene	B(g,h,i)P	0.17	320	0.25	0.76		1.6		0.64		1.5		0.42	0.87		0.2	0.33				
Phenol	Phenol	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
2-Chlorophenol	2-CP	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
N-Nitroso-di-n-propylamine	NDPA	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
4-Chloro-3-methylphenol	4-C-3-MP	(--)	(--)	0.8	U	0.15	U	0.096	U	0.096	U	1.3	U	0.36	U	0.22	U	0.74	U	0.21	U
2-Nitrophenol	2-NP	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
2,4-Dimethylphenol	2,4-DMP	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
2,4-Dichlorophenol	2,4-DCP	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
2,4,6-Trichlorophenol	2,4,6-TCP	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
bis(2-Chloroethyl)ether	b(2-c)E	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
Hexachloroethane	HCE	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
Nitrobenzene	Nitrobenzene	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
Isophorone	IP	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
bis(2-Chloroethoxy)methane	b(2-c)M	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
Hexachlorobutadiene	HCBD	(--)	(--)	0.8	U	0.15	U	0.096	U	0.096	U	1.3	U	0.36	U	0.22	U	0.74	U	0.21	U
Hexachlorocyclopentadiene	HCCPD	(--)	(--)	2	U	0.38	U	0.24	U	0.24	U	3.4	U	0.91	U	0.56	U	1.9	U	0.53	U
2-Chloronaphthalene	2-CNP	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
Dimethylphthalate	DMP	(--)	(--)	0.8	U	0.15	U	0.096	U	0.096	U	1.3	U	0.36	U	0.22	U	0.74	U	0.21	U
2-Methylphenol	2-MP	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
2,2'-oxybis(1-Chloropropane)	2,2-OB-1-CP	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
4-Methylphenol	4-MP	(--)	(--)	0.8	U	0.15	U	0.096	U	0.096	U	1.3	U	0.36	U	0.22	U	0.74	U	0.21	U
4-Chloroaniline	4-CLA	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.27	J
2,4,5-Trichlorophenol	2,4,5-TCP	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
2-Nitroaniline	2-NA	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
Atrazine	Atrazine	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
Caprolactam	Caprolactam	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
Benzaldehyde	Benzald	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.13	J
4-Nitrophenol	4-NP	(--)	(--)	2	U	0.38	U	0.24	U	0.24	U	3.4	U	0.91	U	0.56	U	1.9	U	0.53	U
2,4-Dinitrotoluene	2,4-DNT	(--)	(--)	0.8	U	0.15	U	0.096	U	0.096	U	1.3	U	0.36	U	0.22	U	0.74	U	0.21	U
Pentachlorophenol	PCP	(--)	(--)	2	U	0.38	U	0.24	U	0.24	U	3.4	U	0.91	U	0.56	U	1.9	U	0.53	U
2,4-Dinitrophenol	2,4-DNP	(--)	(--)	8	U	1.5	U	1	U	1	U	13	U	3.6	U	2.2	U	7.4	U	2.1	U
4,6-Dinitro-2-methylphenol	4,6-DN-2-MP	(--)	(--)	2	U	0.38	U	0.24	U	0.24	U	3.4	U	0.91	U	0.56	U	1.9	U	0.53	U
2,6-Dinitrotoluene	2,6-DNT	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U
4-Chlorophenyl-phenylether	4-CPPE	(--)	(--)	0.41	U	0.075	U	0.047	U	0.047	U	0.66	U	0.18	U	0.11	U	0.38	U	0.1	U

U = The compound was not detected at the indicated concentration.

J = Estimated value; ND = not detected.

⁽¹⁾ New Jersey Sediment Screening Guidelines represent Effects Range-Low (ER-L) and Effects Range-Medium (ER-M)

in Table 2 of NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

(--) = New Jersey Sediment Screening Guideline not listed in NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

Bold indicates concentration above the ER-L; bold and shaded indicates concentration above the ER-M.

ppm = parts per million.

Revised Table 9-8 (August 2019)
Semi-Volatile Organic Compounds in Sediment Samples
Chevron Perth Amboy, New Jersey

TRC Sample No./Depth Sampled (in): SED-03-C/30-36 SED-02-A/0-6 SED-02-B/0-6 SED-02-B/0-6D SED-02-C/0-6 SED-01-A/0-6 SED-01-B/0-6 SED-01-C/0-6 SED-16-C/0-6
 Date Sampled: 12/19/02 12/20/02 12/20/02 12/20/02 12/20/02 12/20/02 12/20/02 12/17/02
 Lab Sample No.: 3967923 3967892 3967889 3967890 3967894 3967881 3967883 3967905
 Laboratory: Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster

SVOCs (cont'd) (ppm)	Abbrev.	ER-L ⁽¹⁾	ER-M ⁽¹⁾	Woodbridge Creek								Arthur Kill		
				⇒				⇒						
Diethylphthalate	DEP	(-)	(-)	0.8	U	0.15	U	0.096	U	0.096	U	0.74		
N-Nitrosodiphenylamine	NDPhA	(-)	(-)	0.41	U	0.075	U	0.047	U	0.047	U	0.38		
4-Bromophenyl-phenylether	4-BPPE	(-)	(-)	0.41	U	0.075	U	0.047	U	0.047	U	0.1		
Hexachlorobenzene	HCB	0.02	24	0.41	U	0.075	U	0.047	U	0.047	U	0.1		
Di-n-butylphthalate	DBP	(-)	(-)	0.8	U	0.15	U	0.096	U	0.096	U	0.21		
Butylbenzylphthalate	BBP	(-)	(-)	0.8	U	0.25	J	0.096	U	0.096	U	0.21		
3,3'-Dichlorobenzidine	3,3'-DCBd	(-)	(-)	0.8	U	0.15	U	0.096	U	0.096	U	0.21		
bis(2-Ethylhexyl)phthalate	B(2-EH)P	(-)	(-)	0.8	U	4.3		2.1		1	20	6.5		
Di-n-octylphthalate	DOP	(-)	(-)	0.8	U	0.15	U	0.096	U	0.096	U	0.21		
3-Nitroaniline	3-NA	(-)	(-)	0.8	U	0.15	U	0.096	U	0.096	U	0.21		
Dibenzofuran	DBF	(-)	(-)	0.79	J	0.075	U	0.07	J	0.047	U	0.1		
4-Nitroaniline	4-NA	(-)	(-)	0.8	U	0.15	U	0.096	U	0.096	U	0.21		
Carbazole	Carbazole	(-)	(-)	0.41	U	0.075	U	0.13	J	0.047	U	0.1		
1,1'-Biphenyl	1,1-BP	(-)	(-)	0.41	U	0.075	U	0.047	U	0.047	U	0.1		
Acetophenone	Acetophen	(-)	(-)	0.8	U	0.15	U	0.096	U	0.096	U	0.21		
Total Targeted SVOCs		(-)	(-)	22.978		13.652		33.266		14.477		33.021		
Total TICs		(-)	(-)		476		107.8		43.12		37.84		157	
Total PAHs		4	45	22.188		9.102		30.966		13.477		13.021		4.296
Total SVOCs		(-)	(-)	498.978		121.452		76.386		52.317		190.021		90.896
													77.656	
													110.402	
													136.056	

U = The compound was not detected at the indicated concentration.

J = Estimated value; ND = not detected.

⁽¹⁾ New Jersey Sediment Screening Guidelines represent Effects Range-Low (ER-L) and Effects Range-Medium (ER-M)

in Table 2 of NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

(-) = New Jersey Sediment Screening Guideline not listed in NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

Bold indicates concentration above the ER-L; bold and shaded indicates concentration above the ER-M.

ppm = parts per million.

Revised Table 9-8 (August 2019)
Semi-Volatile Organic Compounds in Sediment Samples
Chevron Perth Amboy, New Jersey

TRC Sample No./Depth Sampled (in): SED-13-C/0-6	SED-13-C/0-6D	SED-14-C/0-6	SED-18-C/0-6	SED-15-C/0-6	SED-17-C/0-6	FB121902	FB122002
Date Sampled: 12/17/02	12/17/02	12/17/02	12/17/02	12/17/02	12/17/02	12/19/02	12/20/02
Lab Sample No.: 3964479&80	3964481&82	3964483&84	3964488	3964477&78	3964486	3967924	3967895
Laboratory: Lancaster	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster	Lancaster

SVOCs (ppm)	Abbrev.	ER-L ⁽¹⁾	ER-M ⁽¹⁾	Arthur Kill				Field Blanks (ppb)			
				↔	↔	↔	1	U	1	U	1
Naphthalene	Naphthalene	0.16	2.1	0.1	0.11	0.15	0.094	0.1	0.8		
2-Methylnaphthalene	2-MNap	0.07	0.67	0.069	0.07	0.085	0.069	0.064	0.67		
Acenaphthylene	ACPL	0.044	0.64	0.14	0.14	0.15	0.12	0.15	0.59		
Acenaphthene	ACP	0.016	0.5	0.077	0.067	0.46	0.065	0.04	3.9		
Fluorene	Fluorene	0.019	0.54	0.085	0.077	0.21	0.069	0.053	1.2		
Phenanthrene	PhA	0.24	1.5	0.3	0.3	0.28	0.34	0.36	2.2		
Anthracene	ANT	0.085	1.1	0.29	0.26	0.31	0.27	0.3	2.4		
Fluoranthene	Fluoranthene	0.6	5.1	1.2	1.1	1.3	0.92	1.1	6.4		
Pyrene	Pyrene	0.665	2.6	1.3	1.3	1.6	1.2	1.4	7.3		
Benzo(a)anthracene	B(a)A	0.261	1.6	0.56	0.52	0.61	0.52	0.65	3.7		
Chrysene	Chrysene	0.384	2.8	0.68	0.59	0.62	0.67	0.94	3.8		
Benzo(b)fluoranthene	B(b)F	(-)	(-)	0.94	0.9	0.91	0.21	1.3	3.7		
Benzo(k)fluoranthene	B(k)F	0.24	1340	0.37	0.26	0.34	0.33	0.44	1.2		
Benzo(a)pyrene	B(a)P	0.43	1.6	0.66	0.6	0.65	0.61	0.85	3.2		
Indeno(1,2,3-cd)pyrene	I(1,2,3-cd)P	0.2	320	0.38	0.35	0.35	0.3	0.64	1.6		
Dibenz(a,h)anthracene	DB(a,h)a	0.063	0.26	0.1	0.097	0.092	0.084	0.15	0.47		
Benzo(g,h,i)perylene	B(g,h,i)P	0.17	320	0.37	0.35	0.32	0.26	0.63	1.7		
Phenol	Phenol	(--)	(--)	0.099	U	0.09	U	0.11	U	0.068	U
2-Chlorophenol	2-CP	(--)	(--)	0.099	U	0.09	U	0.1	U	0.068	U
N-Nitroso-di-n-propylamine	NDPA	(--)	(--)	0.099	U	0.09	U	0.1	U	0.068	U
4-Chloro-3-methylphenol	4-C-3-MP	(--)	(--)	0.2	U	0.18	U	0.21	U	0.23	U
2-Nitrophenol	2-NP	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
2,4-Dimethylphenol	2,4-DMP	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
2,4-Dichlorophenol	2,4-DCP	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
2,4,6-Trichlorophenol	2,4,6-TCP	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
bis(2-Chloroethyl)ether	b(2-c)E	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
Hexachloroethane	HCE	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
Nitrobenzene	Nitrobenzene	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
Isophorone	IP	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
bis(2-Chloroethoxy)methane	b(2-c)M	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
Hexachlorobutadiene	HCBD	(--)	(--)	0.2	U	0.18	U	0.21	U	0.19	U
Hexachlorocyclopentadiene	HCCPD	(--)	(--)	0.51	U	0.46	U	0.52	U	0.48	U
2-Chloronaphthalene	2-CNP	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
Dimethylphthalate	DMP	(--)	(--)	0.2	U	0.18	U	0.21	U	0.19	U
2-Methylphenol	2-MP	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
2,2'-oxybis(1-Chloropropane)	2,2-OB-1-CP	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
4-Methylphenol	4-MP	(--)	(--)	0.2	U	0.18	U	0.21	U	0.19	U
4-Chloroaniline	4-CLA	(--)	(--)	0.099	U	0.09	U	0.1	U	0.12	J
2,4,5-Trichlorophenol	2,4,5-TCP	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
2-Nitroaniline	2-NA	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
Atrazine	Atrazine	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
Caprolactam	Caprolactam	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
Benzaldehyde	Benzald	(--)	(--)	0.1	J	0.11	J	0.13	J	0.15	J
4-Nitrophenol	4-NP	(--)	(--)	0.51	U	0.46	U	0.52	U	0.48	U
2,4-Dinitrotoluene	2,4-DNT	(--)	(--)	0.2	U	0.18	U	0.21	U	0.19	U
Pentachlorophenol	PCP	(--)	(--)	0.51	U	0.46	U	0.52	U	0.48	U
2,4-Dinitrophenol	2,4-DNP	(--)	(--)	2	U	1.8	U	2.1	U	1.9	U
4,6-Dinitro-2-methylphenol	4,6-DN-2-MP	(--)	(--)	0.51	U	0.46	U	0.52	U	0.48	U
2,6-Dinitrotoluene	2,6-DNT	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U
4-Chlorophenyl-phenylether	4-CPPE	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U

U = The compound was not detected at the indicated concentration.

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in Table 2 of NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

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Revised Table 9-8 (August 2019)
Semi-Volatile Organic Compounds in Sediment Samples
Chevron Perth Amboy, New Jersey

TRC Sample No./Depth Sampled (in): SED-13-C/0-6 SED-13-C/0-6D SED-14-C/0-6 SED-18-C/0-6 SED-15-C/0-6 SED-17-C/0-6 FB121902 FB122002
 Date Sampled: 12/17/02 12/17/02 12/17/02 12/17/02 12/17/02 12/17/02 12/19/02 12/20/02
 Lab Sample No.: 3964479&80 3964481&82 3964483&84 3964488 3964477&78 3964486 3967924 3967895
 Laboratory: Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster Lancaster

SVOCs (cont'd) (ppm)	Abbrev.	ER-L ⁽¹⁾	ER-M ⁽¹⁾	Arthur Kill								Field Blanks (ppb)			
				⇒	⇒	⇒	⇒	⇒	⇒	⇒	⇒	⇒	⇒	⇒	
Diethylphthalate	DEP	(-)	(-)	0.2	U	0.18	U	0.21	U	0.19	U	0.23	U	0.14	U
N-Nitrosodiphenylamine	NDPhA	(-)	(-)	0.099	U	0.09	U	0.1	U	0.093	U	0.11	U	0.068	U
4-Bromophenyl-phenylether	4-BPPE	(-)	(-)	0.099	U	0.09	U	0.1	U	0.093	U	0.11	U	0.068	U
Hexachlorobenzene	HCB	0.02	24	0.099	U	0.09	U	0.1	U	0.093	U	0.11	U	0.068	U
Di-n-butylphthalate	DBP	(-)	(-)	0.2	U	0.18	U	0.21	U	0.19	U	0.23	U	0.14	U
Butylbenzylphthalate	BBP	(-)	(-)	0.2	U	0.18	U	0.21	U	0.19	U	0.23	U	0.14	U
3,3'-Dichlorobenzidine	3,3'-DCBd	(-)	(-)	0.2	U	0.18	U	0.21	U	0.19	U	0.23	U	0.14	U
bis(2-Ethylhexyl)phthalate	B(2-EH)P	(--)	(--)	4.5		4.8		3.7		4.7		3.9		0.14	J
Di-n-octylphthalate	DOP	(--)	(--)	0.2	U	0.18	U	0.21	U	0.19	U	0.23	U	0.14	U
3-Nitroaniline	3-NA	(--)	(--)	0.2	U	0.18	U	0.21	U	0.19	U	0.23	U	0.14	U
Dibenzofuran	DBF	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U	0.11	U	0.48	J
4-Nitroaniline	4-NA	(--)	(--)	0.2	U	0.18	U	0.21	U	0.19	U	0.23	U	0.14	U
Carbazole	Carbazole	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U	0.11	U	0.12	J
1,1'-Biphenyl	1,1-BP	(--)	(--)	0.099	U	0.09	U	0.1	U	0.093	U	0.11	U	0.16	J
Acetophenone	Acetophen	(--)	(--)	0.2	U	0.18	U	0.21	U	0.19	U	0.23	U	0.14	U
Total Targeted SVOCs		(--)	(--)	12.221		12.001		12.267		11.101		13.657		45.68	ND
Total TICs		(--)	(--)	470.8		89.7		85.4		98.3		138.6		101.5	ND
Total PAHs		4	45	7.621		7.091		8.437		6.131		9.167		44.83	ND
Total SVOCs		(--)	(--)	483.021		101.701		97.667		109.401		152.257		147.18	ND
															144

U = The compound was not detected at the indicated concentration.

J = Estimated value; ND = not detected.

⁽¹⁾ New Jersey Sediment Screening Guidelines represent Effects Range-Low (ER-L) and Effects Range-Medium (ER-M)

in Table 2 of NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

(--) = New Jersey Sediment Screening Guideline not listed in NJDEP's Nov. 1998 Guidance for Sediment Quality Evaluations.

Bold indicates concentration above the ER-L; bold and shaded indicates concentration above the ER-M.

ppm = parts per million.

Table IV
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment
Former Chevron Facility - Perth Amboy, New Jersey

Parameter (mg/kg)	ER-L	ER-M	Sample No.: SED-19-B/6-6.5	SED-19-C/7.5-8	SED-20-A	SED-20-C	SED-21-A	SED-21-C
Acenaphthene	0.016	0.5	ND (0.076)	1.26	ND (0.011)	0.235	ND (0.0098)	0.0235 J
Acenaphthylene	0.044	0.64	ND (0.084)	ND (0.11)	ND (0.012)	ND (0.013)	ND (0.011)	ND (0.013)
Acetophenone	--	--	ND (0.046)	ND (0.060)	ND (0.0065)	ND (0.0073)	ND (0.0060)	ND (0.0071)
Anthracene	0.085	1.1	3.55	3.16	0.0521	0.277	0.0268 J	0.0748
Atrazine	--	--	ND (0.052)	ND (0.067)	ND (0.0072)	ND (0.0082)	ND (0.0067)	ND (0.0079)
Benzaldehyde	--	--	ND (0.060)	ND (0.078)	ND (0.0084)	ND (0.0096)	ND (0.0078)	ND (0.0093)
Benz(a)pyrene	0.43	1.6	10.6	6.24	0.376	0.465	0.199	0.166
Benz(a)anthracene	0.261	1.6	7.03	4.63	0.345	0.475	0.17	0.151
Benz(b)fluoranthene	--	1.8	6.94	3.91	0.541	0.608	0.245	0.217
Benz(ghi)perylene	0.17	--	12.8	5.08	0.285	0.317	0.155	0.136
Benz(k)fluoranthene	0.24	--	0.882	0.853	0.185	0.214	0.0922	0.0681
BHC (Benzohexachloride)	0.003	--	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	<i>Product Limit</i>		--	ND (0.030)	ND (0.039)	ND (0.0043)	0.0959	ND (0.0039)
bis(2-Chloroethoxy)methane	--	--	ND (0.11)	ND (0.14)	ND (0.015)	ND (0.017)	ND (0.014)	ND (0.016)
bis(2-Chloroethyl)ether	--	--	ND (0.079)	ND (0.10)	ND (0.011)	ND (0.013)	ND (0.010)	ND (0.012)
bis(2-Chloroisopropyl)ether	--	--	ND (0.078)	ND (0.10)	ND (0.011)	ND (0.012)	ND (0.010)	ND (0.012)
bis(2-Ethylhexyl)phthalate	0.18216	2.64651	7.01	23.5	0.158	0.277	0.115	0.476
4-Bromophenyl-phenylether	--	--	ND (0.095)	ND (0.12)	ND (0.013)	ND (0.015)	ND (0.012)	ND (0.015)
Butyl benzyl phthalate	--	0.063	ND (0.15)	ND (0.20)	ND (0.021)	ND (0.024)	ND (0.020)	ND (0.023)
Caprolactam	--	--	ND (0.083)	ND (0.11)	ND (0.012)	ND (0.013)	ND (0.011)	ND (0.013)
Carbazole	--	--	ND (0.12)	ND (0.16)	0.0641 J	0.207	0.0247 J	0.0355 J
4-Chloraniline	--	--	ND (0.084)	ND (0.11)	ND (0.012)	ND (0.013)	ND (0.011)	ND (0.013)
4-Chloro-3-methyl phenol	--	--	ND (0.26)	ND (0.34)	ND (0.037)	ND (0.042)	ND (0.034)	ND (0.040)
2-Chloronaphthalene	--	--	ND (0.081)	ND (0.10)	ND (0.011)	ND (0.013)	ND (0.011)	ND (0.012)
2-Chlorophenol	--	0.008	ND (0.26)	ND (0.34)	ND (0.037)	ND (0.042)	ND (0.034)	ND (0.040)
4-Chlorophenyl-phenylether	--	--	ND (0.079)	ND (0.10)	ND (0.011)	ND (0.013)	ND (0.010)	ND (0.012)
Chrysene	0.384	2.8	11.7	6.96	0.521	0.601	0.25	0.21
Dibenz(a,h)anthracene	0.063	0.26	2.92	1.67	0.0731	0.0816	0.0382	0.0298 J
Dibenofuran	--	--	ND (0.078)	ND (0.10)	ND (0.011)	0.22	ND (0.010)	0.0164 J
3,3'-Dichlorobenzidine	--	--	ND (0.067)	ND (0.086)	ND (0.0093)	ND (0.011)	ND (0.0086)	ND (0.010)
2,4-Dichlorophenol	--	0.005	ND (0.42)	ND (0.55)	ND (0.059)	ND (0.067)	ND (0.055)	ND (0.065)
Diethyl phthalate	--	0.006	ND (0.089)	ND (0.12)	ND (0.013)	ND (0.014)	ND (0.012)	ND (0.014)
2,4-Dimethyl phenol	--	--	ND (0.44)	ND (0.57)	ND (0.062)	ND (0.070)	ND (0.057)	ND (0.068)
Dimethyl phthalate	--	--	ND (0.092)	ND (0.12)	ND (0.013)	ND (0.015)	ND (0.012)	ND (0.014)
Di-n-butyl phthalate	--	0.058	ND (0.058)	ND (0.075)	ND (0.0081)	ND (0.0092)	ND (0.0075)	ND (0.0089)
4,6-Dinitro-o-cresol	--	--	ND (0.32)	ND (0.41)	ND (0.045)	ND (0.051)	ND (0.041)	ND (0.049)
4,6-Dinitro-2-methylphenol	--	--	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	--	--	ND (0.32)	ND (0.41)	ND (0.045)	ND (0.051)	ND (0.041)	ND (0.049)
Dinitrotoluene (2,4,2,6- mixture)	--	--	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	--	--	ND (0.11)	ND (0.15)	ND (0.016)	ND (0.018)	ND (0.015)	ND (0.018)
2,6-Dinitrotoluene	--	--	ND (0.10)	ND (0.13)	ND (0.014)	ND (0.016)	ND (0.013)	ND (0.015)
Di-n-octyl phthalate	--	--	ND (0.13)	ND (0.16)	ND (0.018)	ND (0.020)	ND (0.017)	ND (0.020)
1,4-Dioxane	--	--	ND (0.17)	ND (0.22)	ND (0.024)	ND (0.027)	ND (0.022)	ND (0.026)
Fluoranthene	0.6	5.1	6.63	5.1	0.909	1.24	0.365	0.368
Fluorene	0.019	0.54	ND (0.086)	2.57	0.0145 J	0.208	ND (0.011)	0.0285 J
Hexachlorobenzene	0.02	--	ND (0.085)	ND (0.11)	ND (0.012)	ND (0.014)	ND (0.011)	ND (0.013)
Hexachlorobutadiene	--	0.0013	ND (0.073)	ND (0.094)	ND (0.010)	ND (0.012)	ND (0.0094)	ND (0.011)
Hexachlorocyclopentadiene	--	--	ND (0.27)	ND (0.35)	ND (0.037)	ND (0.042)	ND (0.035)	ND (0.041)
Hexachloroethane	--	0.073	ND (0.073)	ND (0.094)	ND (0.010)	ND (0.012)	ND (0.0094)	ND (0.011)
Indeno(1,2,3-cd)pyrene	0.2	--	2.89	1.79	0.282	0.32	0.143	0.101
Isophorone	--	--	ND (0.070)	ND (0.091)	ND (0.0099)	ND (0.011)	ND (0.0091)	ND (0.011)
2-Methylnaphthalene	0.07	0.67	14.5	14.9	ND (0.020)	0.438	ND (0.019)	ND (0.022)
2-Methylphenol	--	--	ND (0.30)	ND (0.39)	ND (0.042)	ND (0.047)	ND (0.039)	ND (0.046)
3&4-Methylphenol	--	--	ND (0.33)	ND (0.43)	ND (0.047)	ND (0.053)	ND (0.043)	ND (0.051)
Naphthalene	0.16	2.1	3.12	4.06	ND (0.010)	0.268	ND (0.0093)	ND (0.011)
2-Nitroaniline	--	--	ND (0.12)	ND (0.15)	ND (0.016)	ND (0.018)	ND (0.015)	ND (0.018)
3-Nitroaniline	--	--	ND (0.10)	ND (0.14)	ND (0.015)	ND (0.017)	ND (0.014)	ND (0.016)
4-Nitroaniline	--	--	ND (0.10)	ND (0.13)	ND (0.014)	ND (0.016)	ND (0.013)	ND (0.016)
Nitrobenzene	--	--	ND (0.076)	ND (0.098)	ND (0.011)	ND (0.012)	ND (0.0098)	ND (0.012)
2-Nitrophenoxy	--	--	ND (0.28)	ND (0.36)	ND (0.039)	ND (0.044)	ND (0.036)	ND (0.043)
4-Nitrophenoxy	--	--	ND (0.44)	ND (0.57)	ND (0.062)	ND (0.070)	ND (0.057)	ND (0.068)
n-Nitrosodi-n-propylamine	--	--	ND (0.064)	ND (0.083)	ND (0.0089)	ND (0.010)	ND (0.0083)	ND (0.0098)
n-Nitrosodiphenylamine	--	--	ND (0.16)	ND (0.20)	ND (0.022)	ND (0.025)	ND (0.020)	ND (0.024)
p-Chloroaniline	--	--	NA	NA	NA	NA	NA	NA
p-Chloro-m-cresol	--	--	NA	NA	NA	NA	NA	NA
Pentachlorophenol	--	0.017	ND (0.45)	ND (0.58)	ND (0.063)	ND (0.071)	ND (0.058)	ND (0.069)
Phenanthrene	0.24	1.5	19.2	12.6	0.37	1.15	0.13	0.316
Phenol	--	0.13	ND (0.28)	ND (0.36)	ND (0.038)	ND (0.044)	ND (0.036)	ND (0.042)
Pyrene	0.665	2.6	13.1	12	0.813	1.09	0.346	0.408
1,2,4,5-Tetrachlorobenzene	--	--	ND (0.080)	ND (0.10)	ND (0.011)	ND (0.013)	ND (0.010)	ND (0.012)
2,3,4,6-Tetrachlorophenol	--	--	ND (0.27)	ND (0.35)	ND (0.038)	ND (0.043)	ND (0.035)	ND (0.042)
2,4,5-Trichlorophenol	--	0.003	ND (0.30)	ND (0.39)	ND (0.043)	ND (0.048)	ND (0.039)	ND (0.047)
2,4,6-Trichlorophenol	--	0.006	ND (0.25)	ND (0.32)	ND (0.034)	ND (0.039)	ND (0.032)	ND (0.038)
Low Molecular Weight PAHs	--	--	40.37	38.55	0.4366	2.576	0.1568	0.4428
High Molecular Weight PAHs	--	--	86.092	48.233	4.3301	5.4116	2.0034	1.8549
Total PAHs	4	45	126.462	86.783	4.7667	7.9876	2.1602	2.2977
Total SVOC TIC	--	--	336 J	221 J	3.06 J	2.95 J	4.91 J	1.27 J
Total VOC and SVOC TICs	--	--	533 J	493 J	3.06 J	2.95 J	4.91 J	1.27 J

ER-L = NJDEP Eco Screening Criteria Effects Low Range (Saline)

ER-M = NJDEP Eco Screening Criteria Effects Medium Range (Saline)

Bold indicates concentrations above the ER-L

Bold and Underlined indicates concentrations above the ER-M

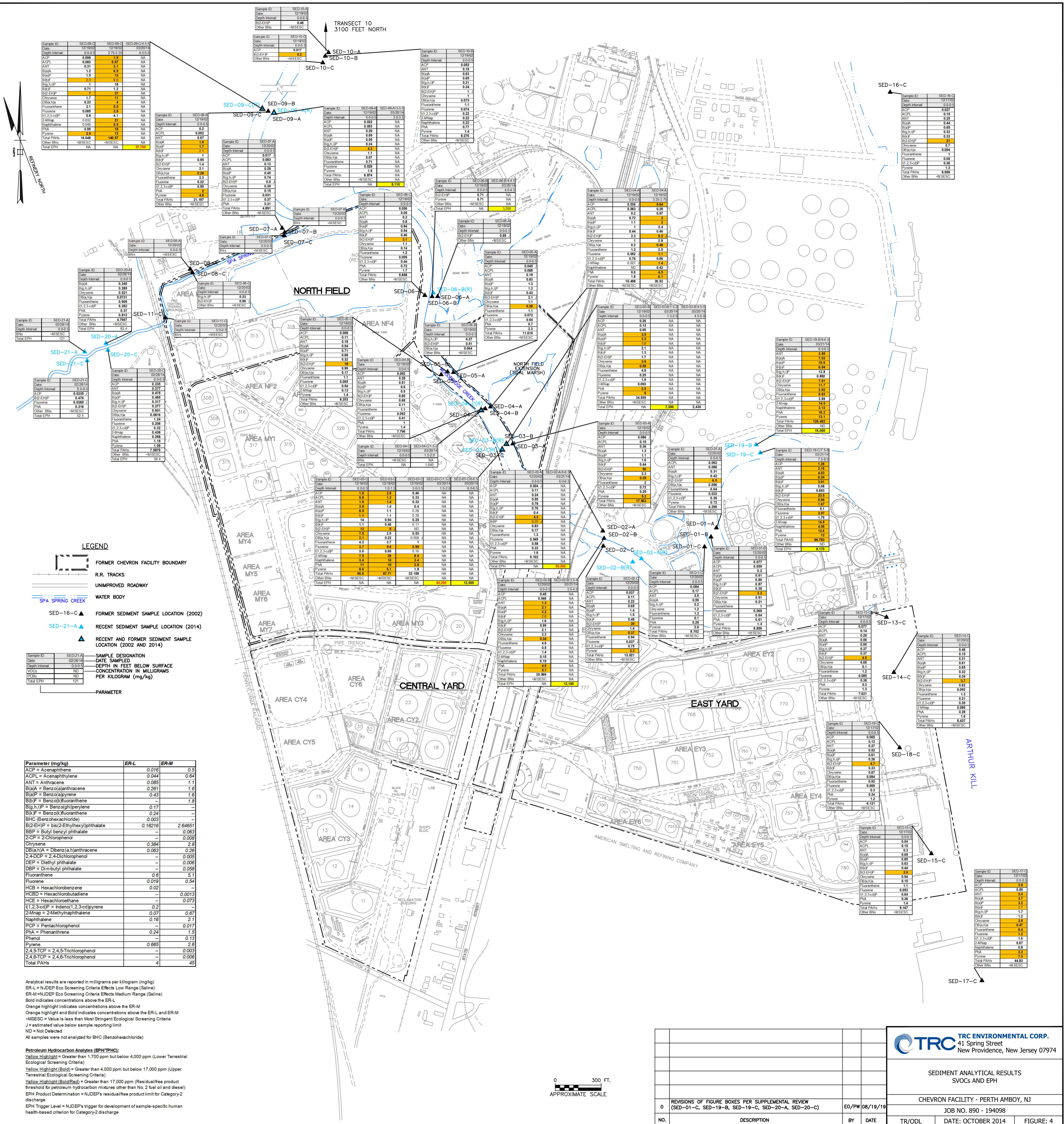
ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

ATTACHMENT 4:

**REVISED FIGURE 4 of the 2014 SUPPLEMENTAL ECOLOGICAL
EVALUATION REPORT**



FIGURES

